THE JOURNAL OF POLITICAL ECONOMY

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THE JOURNAL OF
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WEALTH, SAVING, AND THE RATE OF INTEREST

LLOYD A. METZLER
University of Chicago

I

THE fundamental thesis of classical economics, that a free-market economy has an automatic tendency to approach a state of full employment, has been a subject of heated controversy in recent decades. Indeed, after the publication of Keynes's *General Theory* there were many economists who rejected the classical thesis completely on the ground that it contained internal inconsistencies. Today, however, we are witnessing a renaissance of the classical doctrines. In part, the renaissance is attributable to world-wide economic developments since the end of the war, which have been characterized by a high level of demand and by full employment in almost all industrial countries. But the rebirth of classical theory is also attributable, in part, to attempts to reconstruct the classical doctrines along lines which make them immune to the Keynesian criticisms.

The principal architect of the reconstruction is Pigou;[1] but the basic idea of the remodeled classical theory can be found in the works of other economists as well, particularly in the works of Scitovszky[2] and Haberler.[3] The innovation which these economists introduced was a reconsideration, or perhaps I should say an elaboration, of the forces determining the quantity of real saving. In the classical theory the amounts of saving and investment out of a full-employment level of income were regarded as functions of the interest rate alone, and the latter was thus the primary governing force of the economic system as a whole. Equilibrium was attained, according to the classical theory, only when the interest rate was such that the quantity of real saving out of a full-employment income was equal to the quantity of real investment.[4] Scitovszky,

[1] A. C. Pigou, *Employment and Equilibrium* (London, 1941), chap. vii; "The Classical Stationary State," *Economic Journal*, LIII (December, 1943), 342–51.

[2] T. Scitovszky, "Capital Accumulation, Employment and Price Rigidity," *Review of Economic Studies*, VIII (1940–41), 69–88.

[3] G. Haberler, *Prosperity and Depression* (3d ed.; Geneva, 1941), pp. 491–503.

[4] Consider, for example, the following remark of J. S. Mill: "There must be, as in other cases of value, some rate [of interest] which . . . may be called the natural rate; some rate about which the market rate oscillates, and to which it always tends to return. This rate partly depends on the amount of

Pigou, and Haberler retained this basic concept of equilibrium but argued that saving depends upon the real value of privately held wealth as well as upon the interest rate. Other things remaining the same, they said, real saving tends to be smaller and real expenditure for consumption tends to be larger, the larger is the real value of private wealth. For convenience, I shall hereafter use the expression "saving-wealth relation" to designate such a functional connection between current saving and private wealth.

The saving-wealth relation was employed by Pigou and Haberler to defend the classical theory against the criticism of Keynesian economics. In particular, the relation was employed to show that a flexible-wage economy has an automatic tendency to approach a state of full employment, as postulated in the classical theory. On account of the special purpose which it originally served, the saving-wealth relation is now widely considered to be a modification, but not a fundamental change, in the classical theory. Indeed, Haberler even suggests that some sort of functional connection between saving and wealth is implicit in works on economics which preceded the explicit recognition of the saving-wealth relation.[5]

I do not share these views. In my opinion the saving-wealth relation is more nonclassical in its implications than any of the contributions to the subject would lead one to believe. Although the Scitovszky-Pigou-Haberler system resembles the classical system in its tendency toward a state of full employment, it is quite unlike the classical system in other respects, and these other respects have generally been overlooked. The most striking difference between the new system and the classical concerns the interest rate, and this is the subject which I wish to explore in the present paper.

The distinguishing feature of the classical theory of the interest rate is its emphasis upon so-called "real" conditions of demand and supply and its denial of the influence of monetary policy or banking policy. The classical economists believed that there exists a unique interest rate, or a unique pattern of long-term and short-term rates, at which the economic system is in equilibrium and that this unique interest rate cannot be influenced by changes in the quantity of money. The following quotation from Ricardo is representative of the classical opinion:

> Interest for money . . . is not regulated by the rate at which the bank will lend, whether it be 5, 4, or 3 per cent, but by the rate of profits which can be made by the employment of capital, and which is totally independent of the quantity or of the value of money. Whether a bank lent one million, ten million, or a hundred millions, they would not permanently alter the market rate of interest; they would alter only the value of money which they thus issued. In one case, ten or twenty times more money might be required to carry on the same business than what might be required in the other.[6]

In contrast to the classical doctrine, the theory of the interest rate implicit in the Scitovszky-Pigou-Haberler system is at least partly a monetary theory, as I

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accumulation going on in the hands of persons who cannot themselves attend to the employment of their savings, and partly on the comparative taste existing in the community for the active pursuits of industry, or for the leisure, ease, and independence of an annuitant" (*Principles* [5th ed.], Book III, chap. xxiii, § 1). Although Mill does not specify in this passage that the saving and investment which govern the interest rate are full-employment saving and full-employment investment, the tenor of his work strongly suggests that this is what he had in mind (see, e.g., *ibid.*, Book III, chap. xiv).

[5] *Op. cit.*, p. 499, n. 2.

[6] David Ricardo, *Principles of Political Economy* ("Everyman's ed."), p. 246.

shall demonstrate below. In this system there is no single interest rate and no single pattern of rates at which the economy is in equilibrium. Rather, there are an infinite number of different rates capable of performing the equilibrating function, and the particular rate that prevails at any given time depends to a considerable extent upon the policy of the banking authorities. Thus, in salvaging one feature of classical economics—the automatic tendency of the system to approach a state of full employment—Pigou and Haberler have destroyed another feature, namely, the real theory of the interest rate. In this respect Pigou, the archdefender of classical economics, has deserted Mill and Marshall and joined Schumpeter and Keynes![7] Although remnants of the classical, real theory of the interest rate remain, these are overshadowed, I believe, by the monetary feature which has been added. Moreover, the added feature which transforms the interest rate into a monetary rate is not liquidity preference, as in Keynesian economics, but the saving-wealth relation.

The subsequent analysis will be more understandable, I believe, if I digress from my principal theme long enough to indicate briefly the way in which the saving-wealth relation became prominent in economic theory. For this purpose consider an economic system in which the demand for investment is so low and the supply of saving so high that potential full-employment saving exceeds potential full-employment investment at all positive interest rates. In this event, there is no achievable interest rate which fulfils the classical condition of equilibrium. Whatever the interest rate may be, the demand for goods and services as a whole falls short of productive capacity. This is the Keynesian system in its simplest form. And the outcome of this situation, as envisaged by Keynes, is a cumulative reduction in output and employment, the reduction continuing until potential saving is reduced to the level of potential investment through a reduction in real income.

Suppose, however, that wages and other factor costs tend to fall when unemployment develops. To what extent will the reduction in costs stimulate output and move the system back toward full employment? Keynes argued that a general wage reduction affects output primarily through its influence on the interest rate. Any decline in wages and other costs is likely to result, he asserted, in a corresponding decline in other prices. In real terms, then, the only significant effect of the reduction in wages and other costs is an increase in the real value of money balances which tends, through liquidity preference, to reduce the interest rate. If full-employment saving exceeds full-employment investment at all possible interest rates, however, the reduction in the interest rate cannot conceivably eliminate all the deflationary gap and restore output to the full-employment level. Keynes's theory thus leads to the conclusion that wage-and-

[7] Although Pigou is usually considered to be a defender of classical or neoclassical economic theory, his ideas concerning the interest rate were somewhat nonclassical even before the publication of his *Employment and Equilibrium*. He believed, in particular, that the banking system has a limited influence upon the equilibrium interest rate as well as upon the market rate. If the banks establish a market rate below the equilibrium rate, for example, prices and costs tend to rise, and the real expenditures of fixed-income groups are reduced. The resources thus freed are available for capital development, and the increased supply of capital reduces the equilibrium interest rate. Apart from this reservation, Pigou's earlier conception of the interest rate seems to be largely classical in its implications (see A. C. Pigou, *Industrial Fluctuations* [2d ed.; London, 1929], *passim*, but esp. p. 277).

cost reductions are not an effective remedy for deficient demand.[8]

Pigou attempted to refute this Keynesian view concerning wage-and-cost reductions, and in doing so he introduced the saving-wealth relation. He suggested that, as wages and prices decline, the resulting increase in the real value of money balances will stimulate demand in a way which is independent of the change in the interest rate. Money balances constitute a part of private wealth, and the increase in the former accordingly implies an increase in the latter. As the real value of private wealth increases, the amount of saving out of a full-employment level of real income tends to decline. In this manner the excess of potential saving over potential investment which accounted for the initial unemployment is eventually eliminated. In the absence of barriers to price-and-cost reductions, the system thus has an automatic tendency to approach a state of full employment, as envisaged in the classical theory. Saving is brought into line with investment not primarily through a reduction of the interest rate but rather through a general deflation and a corresponding increase in the real value of the money supply.

I do not wish to discuss the relevance of the saving-wealth relation to the arguments frequently heard for a policy of over-all flexibility of wages and prices. Other economists have pointed out that the portion of cash balances whose real value is increased by a general deflation normally constitutes a relatively small part of total assets and that an enormous reduction of prices would therefore be required to increase the real value of a country's total wealth by any substantial amount. They have argued, further, that the general increases or decreases in prices and costs required for the successful operation of such a system might easily lead to expectations of additional price increases or decreases which would upset the stability of the whole system.[9] Such questions of economic policy, however, are not the immediate concern of this paper. I mention them here only to avoid a possible misunderstanding of what I shall say later. In what follows, I shall make the most favorable assumptions possible as to the effects of price movements upon the demand for goods and services; I shall ignore the adverse influence of fluctuating prices upon expectations and assume that there is a substantial tendency for saving to decline when the real value of private wealth rises. Given these favorable assumptions, I shall then ask how an economic system containing the saving-wealth relation is related to classical theory.

II

Before describing the theory of interest implicit in the Scitovszky-Pigou-Haberler system, I wish to say something about the meaning of a "monetary" theory of interest rates. A theory is usually regarded as a monetary theory if the economic system envisaged is one in which the equilibrium interest rate, or the equilibrium pattern of rates, can be altered by a change in the quantity of

[8] J. M. Keynes, *General Theory of Employment, Interest and Money* (New York, 1936), chap. xix. On p. 267 of this chapter, Keynes says: "There is, therefore, no ground for the belief that a flexible wage policy is capable of maintaining a state of continuous full employment; . . . The economic system cannot be made self-adjusting along these lines."

[9] M. Kalecki, "Professor Pigou on 'The Classical Stationary State,' a Comment," *Economic Journal*, LIV (April, 1944), 131–32; D. Patinkin, "Price Flexibility and Full Employment," *American Economic Review*, XXXVIII (September, 1948), 543–64.

money. Although this definition is satisfactory for most purposes, it is not sufficiently accurate to characterize an economic system containing the saving-wealth relation. It is inadequate, in particular, because it does not indicate the manner in which the quantity of money is altered. As I shall demonstrate below, the influence of a change in the quantity of money in the Scitovszky-Pigou-Haberler system depends not only upon the magnitude of the change but also upon the way in which it is brought about. Some changes in the quantity of money will alter the equilibrium interest rate while others will not.

We may distinguish, I believe, between two fundamentally different types of increase or decrease in the quantity of money. The first type is a change which takes place through open-market transactions of the central bank. The significant feature of this type of change is that it consists of an exchange of one form of asset for another. When money holdings are increased through central-bank purchase of securities, for example, holdings of securities outside the central bank are reduced by a corresponding amount. The second type of change consists of a direct increase or decrease in the money supply without any off-setting changes in private holdings of other assets. The supply of money may be reduced, for example, by a currency reform in which one unit of new money is exchanged for two units of old. Or the supply of money may be reduced by means of a governmental budgetary surplus, provided that the excess monetary receipts are impounded. In both these examples the supply of money is altered without altering private holdings of other assets, and it is this characteristic which distinguishes the second type of monetary change from the first.

I intend to show in subsequent parts of this paper that the theory of interest implicit in the Scitovszky-Pigou-Haberler system is a monetary theory if the change in the quantity of money is of the first type and a real theory if the change is of the second type. This means that open-market transactions of the central bank will have a *permanent* influence on the interest rate at which the system is in equilibrium, even after the bank has stopped its purchases or sales of securities. If the change in the quantity of money does not affect the private holdings of other assets, however, it will have no lasting influence on the interest rate. With respect to the rate of interest, the Scitovszky-Pigou-Haberler theory thus occupies an intermediate position between the classical theory and the Keynesian. The classical theory is a real theory of the interest rate from the point of view of both types of monetary change. According to the classical doctrine, neither a central-bank purchase or sale of securities nor an arbitrary increase or decrease in the quantity of money can have any effect upon the interest rate at which the economic system returns to equilibrium. As I have indicated above, the equilibrium interest rate of the classical theory is the rate at which full-employment potential saving is equal to full-employment potential investment, and this equilibrium rate is independent of both the quantity of money and the policy of the central bank. The classical theory, then, is a nonmonetary or real theory of the interest rate, regardless of whether the monetary disturbance is of the first type or the second type.

At the other extreme is Keynes's theory, which is a purely monetary theory from the point of view of either type of monetary disturbance. According to Keynes, the rate of interest is governed

largely by the decisions of asset-holders concerning the proportions in which they wish to hold money and securities; that is, in Keynes's terminology, the rate is determined by liquidity preference.[10] Other things remaining unchanged, the desired ratio between money and securities tends to rise with a fall in the interest rate, and the equilibrium interest rate is the one at which the desired ratio of money to securities corresponds to the actual ratio. From this it follows that any monetary or banking policy which increases the actual quantity of money relative to the actual quantity of securities will reduce the interest rate at which the system is in equilibrium. Thus, both an arbitrary increase in the quantity of money (a disburbance of the second type) and an increase in the quantity of money through a limited and temporary purchase of securities by the central bank (a disturbance of the first type) will reduce the equilibrium interest rate in Keynes's system.

This brief and somewhat elliptical summary of the Keynesian and classical theories of the interest rate is intended to emphasize the polar positions which the two theories occupy, relative to the theory implicit in the Scitovszky-Pigou-Haberler system. The equilibrium interest rate in the classical theory is independent of monetary disturbances, regardless of whether such disturbances are of the first type or the second type. The equilibrium interest rate in Keynes's theory, on the other hand, can be permanently altered by a monetary disturbance of either type. In short, the classical theory is a real theory from the point of view of either type of disturbance, while the Keynesian theory is a monetary theory from the point of view of either type. The polar positions of the two theories explain, I believe, why no distinction has been made in the past between the two types of monetary disturbance. As I shall demonstrate below, however, the theory of the interest rate implicit in the Scitovszky-Pigou-Haberler system is intermediate between the classical theory and the Keynesian theory. It is a monetary theory from the point of view of the first type of monetary disturbance and a real theory from the point of view of the second type. But all this will, I hope, become clear as we proceed.

[10] Keynes, *op. cit.*, chaps. xiii, xv, and xviii.

III

The economic system which will be investigated below is one in which the capital market is subject to three main influences: (1) the influence of current saving and investment, as in the classical or neoclassical theory; (2) the influence of decisions concerning the holding of cash or securities, as in Keynes's doctrine of liquidity preference; and (3) the influence of wealth on current saving, as in the Scitovszky-Pigou-Haberler reconstruction of the classical theory. I assume that the equilibrium rate of interest, or the equilibrium pattern of rates, is determined by the interplay of these three influences.

At the outset I wish to make a number of simplifying assumptions. Although these assumptions are somewhat unrealistic, few of them are absolutely essential, and most of them could be substantially modified without altering any of my principal results. I assume, in the first place, that the economy with which we are dealing is a closed economy with a fixed amount of labor. Second, I assume that the wage rate tends to rise whenever the demand for labor is greater than the fixed supply and to fall whenever the demand is smaller than the fixed supply. Third, I assume that all agents of

production except labor are produced means of production and that all production is carried on at constant returns to scale. Under these conditions the relative prices of all commodities and services are determinate and independent of the commodity composition of the national income. We can therefore speak unambiguously of a rate of total output, or of a level of national income, at which the economy's resources are fully employed. Fourth, I assume that owners of private wealth hold such wealth in only two forms, money (including demand deposits) and common stock, and that all common stock involves approximately the same degree of risk.[11] Fifth, I assume that the central bank is legally authorized to buy and sell the common stock held by the owners of private wealth and that this common stock constitutes the only nonmonetary asset of the banking system.

Given these assumptions, one can readily construct a simple geometric interpretation of the forces governing the interest rate. These forces will operate in two different markets: a market for goods and services as a whole and a market for securities. Consider, first, the market for goods and services. Stability of the general price level in the goods-and-services market obviously requires that the total demand arising from a full-employment level of real income shall be equal to the economy's productive capacity; and this is equivalent to the requirement that potential saving out of a full-employment level of income shall be equal to potential investment. If potential investment at full employment exceeds potential saving, the demand for goods and services as a whole exceeds full-employment output; prices and costs accordingly tend to rise. If potential full-employment investment falls short of potential full-employment saving, on the other hand, this implies that the demand for goods and services as a whole falls short of full-employment output. Hence prices and costs tend to fall.

In the classical theory real saving and real investment were functions of a single variable—the interest rate—and the economy was assumed to be in equilibrium at only one rate. In the theory now being investigated, however, the amount of real saving at full employment is regarded as a function of two variables—the interest rate and the real value of wealth in the hands of the savers. As soon as the second variable is introduced, the concept of a single interest rate at which the goods-and-services market is in

[11] Common stock has been selected as the typical security in order to avoid the difficulties associated with bonds during periods of inflation or deflation. Throughout the paper I assume that, in the absence of movements in interest rates, common-stock prices rise or fall to the same extent that other prices rise or fall, so that a general inflation or deflation does not affect the real value of securities. This means that the real value of a given quantity of securities is a function of the rate of interest alone. (See below.) Although the theory is simplified in this respect by regarding common stock as the typical security, two new problems are thereby introduced, and these must not be overlooked. Perhaps most important, when all investment is financed by issuing common stock, the idea of a functional relation between the rate of interest and the real volume of investment becomes somewhat vague. Under these circumstances businessmen do not commit themselves, as they do when they issue bonds, to the payment of fixed capital charges. Saying that investment depends upon the rate of interest when all securities are common stocks is equivalent to saying that businessmen undertake more investment when stock prices are high than when they are low.

Apart from the problem of defining an investment function, the use of common stock in our argument presents the further problem of separating risk payments from interest payments per se. I have attempted to avoid this second problem by assuming that the degree of risk is about the same for one stock as for another. I realize, however, that such an assumption does not meet the basic difficulty and that, in a more extended treatment of the subject, allowance should be made for differences in risk.

equilibrium loses its meaning. In place of the equilibrium rate of classical theory, we now have a schedule of rates, or a functional relation between the interest rate and the real value of private wealth.

In order to see how such a schedule can be derived, suppose that on a certain date the total of all privately held wealth —money and securities combined—has a certain real value. If the value of private wealth is fixed, saving may be regarded as a function of the rate of interest alone, and I shall assume that with this given saving schedule a rate of interest can be found at which full-employment saving is equal to full-employment investment. Consider, now, what would happen if the interest rate were arbitrarily increased above its equilibrium level. At the higher interest rate potential saving out of a full-employment income would exceed potential investment, which means that, other things remaining the same, the community's demand for goods and services would fall short of its capacity to produce. In other words, the increase in the rate of interest, taken by itself, would bring about a deflationary gap. But if the community's combined holdings of money and securities were increased in some manner at the same time that the rate of interest were raised, then the deflationary gap might be avoided. The increase in asset holdings would tend to reduce the amount of saving corresponding to any given rate of interest, thereby offsetting, or perhaps more than offsetting, the tendency toward excessive saving attributable to the rise in the rate of interest. The rise in the rate of interest would reduce investment, but the increase in the value of private wealth would reduce saving; and it is thus conceivable that full-employment potential saving might equal potential investment at the higher interest rate as well as at the lower rate.

Many other combinations of the interest rate and the real value of private wealth will fulfil the condition that full-employment saving equals full-employment investment, and we may accordingly conceive of a schedule or a functional relation indicating what the real value of private wealth would have to be, for many different interest rates, in order to make the community's demand for goods and services as a whole equal its capacity to produce. The real value of private wealth which fulfils this condition will be an increasing function of the rate of interest. Such a function is plotted as the line *WW* in Figure 1. For convenience, *WW* will be called the "wealth-requirements schedule." At any point on this line potential saving out of full-employment income is equal to potential investment. But, as we move upward and to the right along the line, both saving and investment decline. Investment declines because of the rise in the interest rate, while saving declines because of the increase in the real value of private wealth. Any point below *WW* in Figure 1 represents a point of inflationary potential. At such a point the rate of interest is too low, given the value of private wealth, to bring about an equality between full-employment saving and investment. The demand for goods and services thus exceeds capacity, and prices tend to rise. In the same way one can show that any point *above WW* represents a point of *de*flationary potential. It follows that the demand for goods and services is equal to the economy's productive capacity only for combinations of the interest rate and the value of private wealth lying on *WW*.

The wealth-requirements schedule has been developed, above, in terms of the real value of private wealth as a whole, and no distinction has been made between private holdings of money and

private holdings of securities. Such a distinction has thus far been unnecessary because saving was assumed to be a function of *total* asset holdings and not of the *composition* of these assets. When we later discuss the securities market, however, we shall find that the division of total assets between money and securities is the decisive factor in this market. Our later task will accordingly be simplified if the wealth-requirements schedule can be broken down into its two component parts, namely, money and common stock.

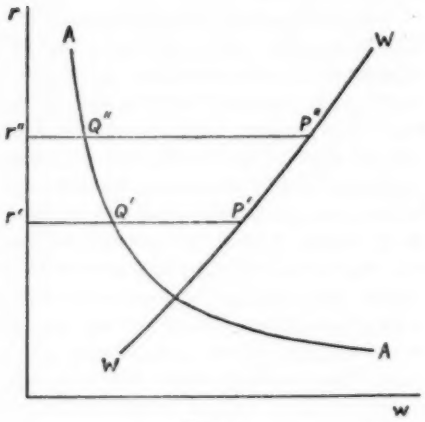

FIG. 1

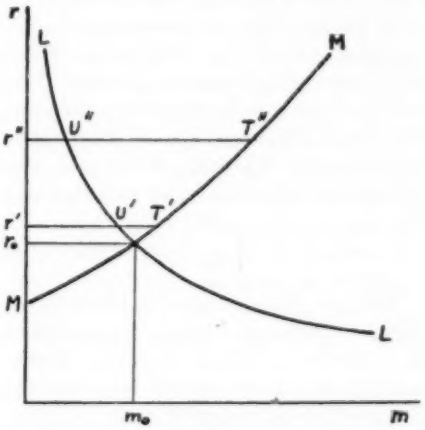

FIG. 2

If the community holds a given amount of common stock, the real value of these stock holdings will obviously depend upon the interest rate. Indeed, the interest rate itself is nothing more than the yield of the stock, and this yield, in turn, is the ratio of the income earned by the stock to its market price. In the short run the income earned by the common stock is a given amount, determined by the fixed supplies of the various agents of production; and this means that the yield, or the rate of interest, varies inversely with the real value of the stock. To put the matter the other way round, we may say that the real value of the given common stock is inversely related to the prevailing rate of interest. The higher the rate of interest, the lower the real value of common-stock holdings and conversely. In Figure 1 the value of the community's security holdings is expressed as such a function of the interest rate by the line AA.

I wish to show, now, how the wealth-requirements schedule, WW, can be expressed in terms of money and interest rates rather than in terms of total wealth and interest rates. For this purpose, suppose that the interest rate is temporarily set at r'' in Figure 1. The wealth-requirements schedule tells us that, in order to prevent an excess or deficiency of demand from developing in the goods-and-services market at this interest rate, the community's holdings of money and securities combined will have to be $r''P''$. But the value of securities alone, at an interest rate of r'', is the distance $r''Q''$ in Figure 1. If the community is to have a sufficient amount of total assets to maintain a balance between demand and supply in the goods-and-service market, its holdings of money will

therefore have to equal the difference between $r''P''$ and $r''Q''$, or $Q''P''$. This difference is plotted in Figure 2 as the line $r''T''$. A similar construction for a rate of interest r' carries over the distance $Q'P'$ of Figure 1 to $r'T'$ of Figure 2. The line MM of Figure 2 is the locus of all such points as T' and T''. Given the community's private holdings of securities, MM indicates the amount of money which will have to be held, at any particular interest rate, in order to keep the amount of saving out of full-employment income equal to the amount of investment. For brevity, MM will be called the "money-requirements schedule." The money-requirements schedule is thus the horizontal difference between the wealth-requirements schedule, WW, and the schedule of the real value of securities, AA.

IV

The line MM of Figure 2, like WW of Figure 1, indicates the conditions needed to maintain a balance between supply and demand in the market for currently produced goods and services. In addition to this goods-and-services market, the market for securities must also be taken into account. The entire economic system cannot be in equilibrium unless the latter market, as well as the former, has reached a balanced position. The market for *new* securities has already been allowed for, by implication, in the preceding discussion of saving and investment; in the absence of hoarding, equality between saving and investment implies equality between the supply of and the demand for new securities. But this new-securities market is usually a relatively small part of the total securities market; in many countries, indeed, the value of new securities offered on the market in a given year is an exceedingly small fraction of the value of previously issued, or old, securities. This means that decisions of asset-holders to augment or reduce their stocks of old securities will frequently exert a much greater influence on the rate of interest than will discrepancies between current saving and current investment. The old-securities market must therefore be taken into account, along with the market for goods and services as a whole, in order to complete the description of interest rates given by Figures 1 and 2.

The existing stock of securities will influence security prices and the rate of interest only if asset-holders, on balance, decide to increase or decrease their holdings of securities, that is, only if the typical asset-holder wishes to substitute additional money for part of his security holdings or additional securities for part of his money holdings. Decisions of this sort depend largely upon the *composition* rather than the size of asset portfolios. Thus, in deciding whether to buy or sell securities, the typical asset-holder compares the existing ratio between his money holdings and his security holdings with the ratio which he regards as satisfactory under the given economic conditions. The degree of his actual liquidity, compared with a sort of optimum liquidity, governs his actions in the securities market.

I shall follow Keynes in assuming that, other things remaining the same, the typical asset-holder wishes to increase his liquidity as the rate of interest falls. Unless the banking authorities intervene, however, private asset-holders cannot, on balance, increase or decrease their holdings of old securities; as of a given moment of time, both the number of shares of stock and the quantity of money in private hands are fixed quantities. This means that, if the prevailing

money-securities ratio differs from the desired ratio, security prices and the rate of interest must continue to change until the desired ratio is brought into line with the prevailing ratio; in short, the demand must be adjusted to the existing supply through appropriate movements in the rate of interest.

The influence of liquidity preference may be examined from another direction, and for present purposes this alternative point of view is more convenient. Instead of starting with a fixed amount of securities and a fixed quantity of money and asking how the rate of interest will be adjusted so that demand will equal supply, we may start with a fixed amount of securities and a fixed interest rate and ask what the total money holdings would have to be in order to satisfy the typical asset-holder with his money-securities ratio. By assuming a number of different interest rates and making similar calculations for each, a liquidity-preference schedule, or a demand-for-money schedule, can thus be built up. Suppose, for example, that, at an interest rate of r'' (Fig. 1), the typical asset-holder wishes to hold money in an amount equal to two-thirds the value of his security holdings. At this interest rate the security holdings of the community as a whole have a real value of $r''Q''$, as shown in Figure 1. It follows that asset-holders as a group will attempt to alter their security holdings and hence alter the rate of interest, unless the real value of money holdings amounts to two-thirds of $r''Q''$. Let the point U'' in Figure 2 be chosen so as to make $r''U''$ equal to two-thirds of $r''Q''$. Suppose, now, that, when the interest rate falls to r', the typical asset-holder wishes to hold money equal to the full value of his securities. The value of total securities at an interest rate of r' is $r'Q'$ (Fig. 1), and the condition of equilibrium in the old-securities market requires that money holdings shall equal this same amount. We may therefore select a point, U', in Figure 2 such that $r'U''$ is equal to $r'Q'$. The liquidity-preference schedule, LL, in Figure 2 is the locus of all such points as U'' and U'; it shows what the community's holdings of money would have to be, at any given interest rate, in order to create a proper balance between cash and securities.

From the construction of the diagram it is apparent that there are two reasons why the demand for money, LL (Fig. 2), tends to rise as the rate of interest falls. First, the typical asset-holder usually wants to hold a larger ratio of cash to securities at low interest rates than at high rates. And, second, the real value of securities, the denominator of the cash-securities ratio, is increased by a fall in the interest rate. In most discussions of liquidity preference only the first of these reasons is taken into account, but the second may be equally important.[12]

V

I have now discussed two different functional relations between the rate of interest and the real quantity of money; the first of these I called a money-requirements schedule, while the second is the usual liquidity-preference schedule. The money-requirements schedule represents all combinations of money balances and the rate of interest for which the community's demand for goods and services as a whole is exactly equal to its capacity to produce. At any point not on this schedule there is either an excess or a deficiency of demand and consequently

[12] The best account I have found of the second reason for the negative slope of the liquidity-preference schedule is by E. Solomon in "Money, Liquidity, and the Long-Term Rate of Interest: An Empirical Study, 1909–38" (University of Chicago dissertation, 1950).

a tendency for prices and costs to rise or fall. The money-requirements schedule, *MM*, thus indicates the possible combinations of the interest rate and the quantity of real cash balances which will maintain over-all price equilibrium in the goods-and-services market. The liquidity-preference schedule, on the other hand, describes the conditions of price equilibrium in the *securities* market. If the actual quantity of real cash balances lies on *LL*, there will be no tendency for

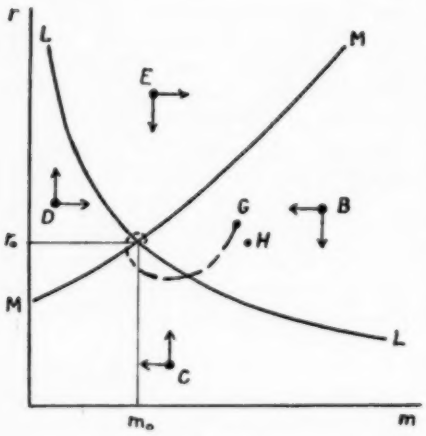

FIG. 3

asset-holders as a whole to attempt to shift from securities to cash or from cash to securities and, accordingly, no tendency for the price of securities or the rate of interest to change. At any point *not* on *LL*, however, the price of securities will either rise or fall, depending upon whether the demand for cash at the prevailing interest rate is smaller or greater than the actual amount.

From Figure 2 it is now apparent that only one combination of the interest rate and the real value of money balances will satisfy the conditions of equilibrium in both the goods-and-services market and the securities market. I have denoted this combination by the two letters r_o and m_o. If all prices, including wages and the costs of other agents of production, tend to rise when demand exceeds supply and to fall when supply exceeds demand, the combination r_o and m_o is the one toward which the economic system will gravitate. The nature of this market mechanism will be clarified, I believe, if we consider what happens to the system when the interest rate and the real value of money balances differ from the equilibrium combination r_o and m_o.

This is done in Figure 3, where I have reproduced the essential features of Figure 2. The points *B*, *C*, *D*, and *E* in Figure 3 represent four points which do not lie on either the liquidity-preference schedule or the money-requirements schedule. Suppose, first, that the actual situation with regard to the rate of interest and the real value of cash balances at a given moment of time can be represented by the point *B*. What happens, in this event, to the variables of our system? The liquidity-preference schedule shows that, at the rate of interest represented by *B*, the community's demand for real money balances falls short of actual money holdings. Asset-holders accordingly attempt to substitute securities for their excess cash holdings, thereby forcing up security prices and reducing the rate of interest. Moreover, in the situation *B* the goods-and-services market as well as the securities market is out of balance. The diagram shows that, at the prevailing interest rate, money holdings are too large to bring about an equality between full-employment saving and full-employment investment. Saving is below the equilibrium level because of the excessive cash holdings, and the demand for goods and services thus exceeds the economy's capacity to produce.

As a result, prices tend to rise, and the real value of money balances is reduced. The movements in the rate of interest and in the real value of money balances are indicated by the short arrows emanating from point B.

By similar reasoning one can demonstrate that, at point C, security prices tend to fall, and the interest rate is correspondingly increased, while the prices of goods and services rise and the real value of cash balances is reduced. Likewise, at D, security prices fall, the rate of interest is increased, commodity prices and wages fall, and the real value of cash balances tends to rise. Finally, if the actual position of the variables is at E, security prices rise, the interest rate is reduced, commodity prices fall, and the real value of cash balances is thus increased. Movements of the variables in the neighborhood of the points C, D, and E have again been indicated by arrows.

Figure 3 demonstrates that when the economic system is out of balance at least one force is always operating to bring the variables of the system closer to the equilibrium point, r_0, m_0. The other force, indicated by the second of the two arrows at each of the points B, C, D, and E, operates in such a way as to impart a circular or cyclical movement to the variables. This suggests that, if the rate of interest and the quantity of real cash balances were initially at some non-equilibrium point such as G, the approach to equilibrium might be a spiral or damped cycle like the one depicted in Figure 3. Although such a damped cycle is possible, it is not inevitable, as I shall demonstrate in the Appendix. In any event, I believe it is highly unlikely that the cyclical movement implied by Figure 3 bears any close resemblance to the typical observed business cycle. Most observed cycles are cycles of output and employment, whereas the cycle depicted in Figure 3 is largely a cycle of prices and interest rates.[13] I have presented the dynamic problem concerning the movements of prices and interest rates merely to show the tendency of the system to approach an equilibrium position and not as a contribution to the theory of business cycles.

VI

I have now shown that the market for goods and services and the market for securities can be in equilibrium simultaneously only at the point r_0, m_0 and that the economic system has an automatic tendency to approach this equilibrium. Superficially, this suggests a close analogy between the rate of interest, r_0, and the classical concept of the equilibrium rate. Like the equilibrium rate of classical theory, the rate r_0 is the only one compatible, under the assumed conditions, with equilibrium of the economic system as a whole; that is, r_0 is the only rate which satisfies both the liquidity-preference requirement and the requirement that full-employment saving shall be equal to full-employment investment. Why, then, does r_0 not have as much claim to be regarded as a real rate as does the classical concept of the real rate of interest?

Whether the rate r_0 is a real rate or a monetary rate depends, as I have indicated earlier, upon the nature of the

[13] Superficially, the cycle of interest rates and prices described above seems to be somewhat like the monetary part of Hicks's business-cycle theory. In reality, however, the two cyclical processes are quite different. The process envisaged by Hicks involves movements of output and employment rather than movements of prices and costs; and savings in Hicks's theory depend upon the rate of interest and real income, whereas savings in the present paper depend upon the rate of interest and the real value of private wealth (J. R. Hicks, *A Contribution to the Theory of Business Cycles* [London: Oxford University Press, 1949], chaps. 11 and 12).

monetary disturbance. If the disturbance is of the first type—that is, if it is a change in the quantity of money associated with the purchase or sale of securities by the central bank—it will alter some of the functional relations of Figure 1 and 2 and will accordingly change the equilibrium interest rate. The rate r_0 must therefore be regarded as a monetary rate from the point of view of monetary disturbances of this sort. On the other hand, if the monetary disturbance is of the second type, which consists of an increase or decrease in the quantity of money without any offsetting changes in other assets, then it will not alter the functional relations of Figures 1, 2, and 3 and will not permanently change the interest rate. The rate r_0 is thus a real rate from the point of view of monetary disturbances of the second type. Because it is simple to describe, I shall first consider a monetary disturbance of the second type.

Suppose that the economic system is initially in equilibrium at a rate of interest r_0 and a quantity of real cash balances m_0. And suppose that, while other things initially remain unchanged, the quantity of money is arbitrarily doubled by giving to each holder of money an additional quantity equal to the amount he already holds. Temporarily, the variables of the system will then be at point H of Figure 3; except for the increase in the quantity of money, nothing in the system will have changed. As I have shown above, however, there will be an automatic tendency for the variables of the system to return eventually to the former equilibrium position, r_0 and m_0. At point H both the securities market and the goods-and-services market will be out of balance, and changes will therefore occur in the interest rate and in the level of prices. The changes in prices, in turn, will affect the real value of cash balances.

Consider, first, the securities market. After the initial monetary disturbance, the quantity of money held by the typical asset-holder is larger than he would like to hold at the prevailing interest rate, r_0. Asset-holders as a group therefore attempt to convert some of their excess cash into securities. As a result, security prices rise, which means that the interest rate falls. The fall in the interest rate increases investment, while the initial increase in the real value of cash balances reduces saving. The demand for goods and services as a whole thus exceeds productive capacity, so that commodity prices and costs begin to rise. The rise in prices tends to reduce the real value of cash balances and thereby initiates a movement of the variables back toward the original equilibrium position. The details of this dynamic process need not concern us here. Suffice it to say that the system as a whole will not be restored to equilibrium until the real value of cash balances is reduced to m_0 and the rate of interest is restored to its former level, r_0.

If the central bank does not acquire or dispose of any assets during the period of adjustment, the real value of money balances can be reduced only by an increase in the price level. Since the real value of cash balances is ultimately restored to its former level, m_0, we know that the increase in prices, in the final position of equilibrium, must be as large as the original increase in the quantity of money. In other words, doubling the nominal quantity of money must result eventually in doubling all money prices and costs, including the money prices of securities as well as the money prices of goods and services. The real variables of the system all return to their former

equilibrium levels. The rate of interest, the real value of saving and investment, and the real value of securities, as well as the real value of cash balances, are all the same in the new equilibrium as before the monetary disturbance occurred. The only permanent effect of increasing the quantity of money is a proportionate increase in the general level of prices and costs.[14]

With respect to monetary disturbances of the second type, such as the one I have just described, the economic system embodying both a saving-wealth relation and a liquidity-preference schedule is evidently quite similar to the classical system. In both the classical system and the system depicted in Figure 3 the values of all real variables are independent of the quantity of money. But this is true of the system in Figure 3 only if the monetary disturbances are of the second type, whereas it is true of the classical system for both types of monetary disturbance. If the disturbance is of the first type, which consists of open-market transactions by the central bank, then the equilibrium interest rate will be altered, as I have suggested above. With respect to monetary disturbances of the first type, the equilibrium interest rate of Figure 3 is therefore a monetary rate, and in this regard it resembles the Keynesian interest rate more closely than it does the classical. In other words, by purchasing or selling securities, the banking authorities can alter not only the temporary interest rate which prevails while the open-market transactions are taking place but also the rate at which the system will return to equilibrium after the bank's transactions in securities have ceased.

The power of the banking authorities to alter the equilibrium interest rate is attributable not to their influence upon the nominal quantity of money but to their influence upon the quantity and value of privately held securities. A central-bank purchase of securities, for example, reduces the quantity of privately held securities. This means that the *AA* schedule of Figure 1 is shifted to the left. And since the liquidity-preference schedule, *LL*, and the money-requirements schedule, *MM*, were both derived, in part, from the *AA* schedule, a shift in the latter causes the former schedules to shift as well. The system as a whole therefore comes into balance, after the securities purchases have been made, at a different rate of interest.

The effect of open-market transactions upon the equilibrium of the system can be described in terms of a ratio indicating the proportion of the total supply of securities held in private hands. Let this ratio be represented by the letter λ. Consider, first, the situation in which λ has a value of 1.0. This means that the total available supply of securities is held by private asset-holders, so that the central bank's assets consist exclusively of currency. Given the holdings of securities by private asset-holders, the rate of interest at which the system is in equilibrium can be determined, as in our earlier illustration, by the intersection of a liquidity-preference schedule, *LL*, and a money-requirements schedule, *MM*. Assuming that the value of private asset holdings when $\lambda = 1.0$ is given in Figure 4 by the solid line *AA* and that the wealth-re-

[14] Using a model more complex than the one I have been considering, D. Patinkin previously demonstrated that if both the saving-wealth relation and liquidity-preference are active forces, monetary disturbances of the second type will not affect the equilibrium interest rate (see "The Indeterminacy of Absolute Prices in Classical Economic Theory," *Econometrica*, XVII [January, 1949], 23–27). Patinkin did not examine the effects of monetary disturbances of the first type and accordingly concluded that the model he had constructed was closer to the classical model than to the Keynesian.

quirements schedule is *WW*, the liquidity-preference schedule and the money-requirements schedule can be derived as in my earlier illustration. These derived schedules, for $\lambda = 1.0$, are represented in Figure 5 by the solid lines *LL* and *MM*, respectively. Under the assumed conditions with respect to security holdings, the equilibrium rate of interest is r_o, and the equilibrium value of real cash balances is m_o, as shown in Figure 5.

Suppose that this equilibrium is disturbed by a substantial purchase of securities on the part of the central bank. The dynamic process by which the economy adapts itself to such open-market transactions will probably be highly complicated. The securities will be purchased at many different prices from the various asset-holders, and this means that we cannot predict exactly how the open-market transactions will affect the cash balances of all asset-holders together. In any event, the real value of cash balances will be influenced by price movements as well as by the central bank's dealings in securities, and it is the combined effect of both influences which ultimately governs the equilibrium value of the real money supply. In view of our interest in the equilibrium of the system, we may pass over the dynamic problems and investigate, instead, the influence of the central bank's security purchases upon the schedules in Figures 4 and 5 which determine the ultimate resting places of our variables.

Suppose that the central bank continues to purchase securities until it has acquired one-third of the common stock available to the economy as a whole and that all transactions between asset-holders and the central bank cease at this point. When the securities market and the goods-and-services market are once again in equilibrium, how will the rate of interest compare with the rate that prevailed before the open-market transactions began? According to the classical theory, the rate of interest should return to its former level as soon as the bank's security purchases have ceased. According to the system depicted in Figures 4 and 5, however, the security purchases by the central bank will permanently *lower* the equilibrium rate of interest.

If the bank acquires one-third of all

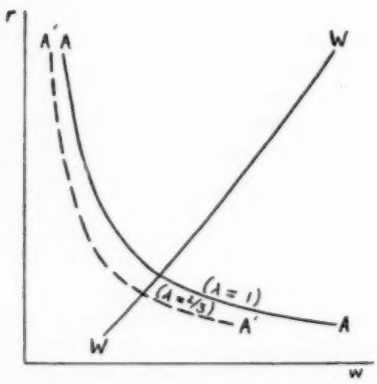

FIG. 4

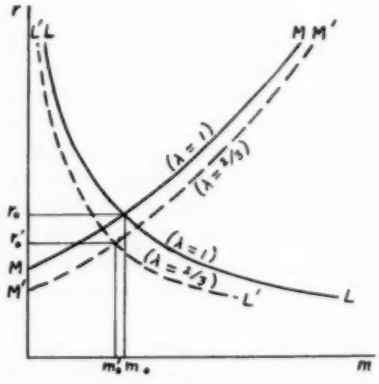

FIG. 5

available securities, the security holdings of private asset-holders will of course be only two-thirds as large as they formerly were, so that λ will have a value of $\frac{2}{3}$. This means that at any given interest rate the real value of private security holdings will be two-thirds of its former value. The broken line $A'A'$ of Figure 4 is drawn at two-thirds of the horizontal distance of the solid line AA from the vertical axis, and $A'A'$ thus represents the real value of private security holdings, expressed again as a function of the rate of interest, after the central bank has acquired its securities. The wealth-requirements schedule, WW, depends upon preferences and upon the savings and investment schedules and presumably will be unaffected by the open-market transactions. Since the money-requirements schedule, MM, depends upon the value of private security holdings as well as upon WW, however, the MM schedule will be shifted. At any given rate of interest, the total assets—money and securities combined—needed to maintain equality between full-employment saving and full-employment investment will be the same as before. But the value of private security holdings has been reduced by the central bank's purchases, and this means that total assets cannot be maintained at the level needed for full employment unless private money holdings are increased by a corresponding amount. In short, the money-requirements schedule, MM, is moved to the right by the same amount that the securities schedule, AA, is moved to the left.[15]

The new money-requirements schedule corresponding to $\lambda = \frac{2}{3}$ is shown in Figure 5 as the broken line $M'M'$.

The liquidity-preference schedule, as well as the money-requirements schedule, is affected by the central bank's purchase of securities. At any given interest rate, the proportions in which the typical asset-holder wishes to hold money and securities are presumably the same as in the old equilibrium. The value of private security holdings, however, is now only two-thirds of the former value at the same interest rate. The desired ratio between money holdings and security holdings will thus not be maintained unless the real value of money balances is reduced to two-thirds of its former value. In other words, the LL schedule in Figure 5 is shifted to the left, the relative amount of the shift being the same as the leftward shift of the securities schedule, AA. The new liquidity-preference schedule,

[15] In describing the consequences of open-market transactions, I assume that the securities schedule, AA, is the only schedule of Figure 4 which is *directly* influenced by the central bank's purchase or sale of securities; the other schedules (i.e., the wealth-requirements schedule, the money-requirements schedule, and the liquidity-preference schedule) are assumed to be affected only in so far as they are related to, or derived from, the securities schedule, AA. This implies that the income available to the typical asset-holder is not altered by the central bank's dealings in securities. If disposable income tended to fall or to rise with an increase or decrease in the central bank's holdings of securities, the saving and investment schedules would also be affected, and the wealth-requirements schedule, which is derived from the saving and investment schedules, would tend to shift.

Taken by themselves, however, open-market transactions may well have a slight influence on disposable income. If the central bank buys securities, for example, the income on these securities is transferred from the former owners to the bank. In the absence of offsetting transactions, the security purchases thus reduce the disposable income of private asset-holders and increase the profits of the central bank by a corresponding amount. I do not wish to discuss the complications introduced by this connection between open-market transactions and disposable income. I therefore assume throughout that any additional profits which the central bank earns by reason of its acquisition of securities are ultimately passed on to private hands in the form of reduced taxes. Under these circumstances, the security purchases by the bank will redistribute income between former asset owners and taxpayers but will not influence the total of disposable income.

for $\lambda = \frac{2}{3}$, is represented in Figure 5 by the line $L'L'$.

The combined effect of the shift in the liquidity-preference schedule and of the shift in the money-requirements schedule is a reduction in the equilibrium rate of interest from r_0 to r'_0, as indicated in Figure 5. Thus, the banking authorities by means of a limited purchase of securities have *permanently* reduced the interest rate at which the economic system is in equilibrium. The dynamic process of adjustment by which the equilibrium interest rate moves from r_0 to r'_0 will probably be highly complex, as I have indicated earlier. Nevertheless, I believe that the influence of the central bank upon the equilibrium interest rate will stand out more clearly if we consider a greatly simplified dynamic sequence.

When the central bank begins to purchase securities, the first effect is a rise in security prices and a corresponding decline in the rate of interest. The actual security transactions themselves do not alter the total value of private asset holdings but merely change the form in which assets are held. The initial result of the bank's purchases, therefore, is a rise in the value of private asset holdings (capital gains) together with a reduction in the rate of interest and a shift on the part of asset-holders from securities to money. One may presume that at the new, lower rate of interest the asset-holders have exchanged securities for cash in such a way as to satisfy their demands for liquidity; for, if this were not true, the prices of securities would continue to rise, and the interest rate to fall, until the asset-holders were willing to part with the amount of securities that the central bank wanted to buy. Although the point representing the new quantity of private money holdings and the new, temporary rate of interest will thus lie somewhere on the liquidity-preference schedule $L'L'$, it cannot at the same time lie on the money-requirements schedule, $M'M'$, or the wealth-requirements schedule, WW. The fall in the interest rate, taken by itself, would normally lead to an excess of full-employment investment over full-employment saving and thus create an excess demand for goods and services. The inflationary pressure is further increased, however, by the capital gains, which increase the value of total private wealth holdings and thereby reduce current saving. As a result, prices and costs tend to rise, and the real value of the money supply is correspondingly reduced. The rise in prices and the reduction in the real value of private money holdings must continue until the real value of security-and-cash holdings combined is low enough to encourage a sufficient amount of saving to make full-employment saving once more equal to full-employment investment. The new equilibrium is finally achieved, as Figures 4 and 5 demonstrate, at a permanently lower rate of interest.

Now, since the new equilibrium must lie on the wealth-requirements schedule, WW, as well as on the money requirements schedule, $M'M'$, it is obvious that, when prices have finally stopped rising and the rate of interest has reached its new and lower equilibrium, the value of total private wealth must be smaller than in the old equilibrium. In short, the final result of the open-market security purchases by the central bank is a reduction in the real value of the total wealth in private hands. This reduction has occurred in two stages: the liquidity of the typical asset-holder has first been increased through the central-bank purchase of securities; and the real value of the larger liquid balances has subse-

quently been reduced through inflation. Thus, under a regime of flexible prices, central-bank purchase of securities is an indirect means of reducing the real value of the total assets—cash and securities combined—in private hands. The reduction in the value of privately held wealth tends, in turn, to increase saving and thereby reduces the rate of interest at which full-employment saving is equal to full-employment investment. To summarize briefly, then, we may say that the central bank is able to alter the equilibrium rate of interest through its power to alter the real value of private wealth.

VII

Assuming that saving depends upon the real value of private wealth as well as upon the interest rate, I have now demonstrated that the equilibrium interest rate is partly a real rate, as in the classical theory, and partly a monetary rate, as in Keynes's theory. Monetary disturbances of one type affect the equilibrium interest rate of the system, while disburbances of another type do not. In general, any monetary disturbance which alters the amount of securities held by the typical asset-holder tends also to affect the interest rate at which the economic system as a whole is in equilibrium. On the other hand, any monetary disburbance which does not affect private security holdings will leave the equilibrium interest rate unchanged.

The distinction which I have made between the two types of monetary disturbance suggests that the true cause of a change in the interest rate is not a change in the quantity of money per se but a change in the amount of other assets held by the typical asset-holder. This conjecture is, indeed, correct. Open-market transactions of the central bank alter the equilibrium interest rate not because they affect the quantity of money but because they affect the quantity of privately held securities. Consider again, for example, the open-market transactions which I have described in Figures 4 and 5. In those illustrations the central bank is assumed to purchase one-third of all privately held securities. As a consequence, the level of prices is increased, the real value of private wealth declines, the propensity to save increases, and real saving finally comes into balance with real investment at a permanently lower interest rate.

Suppose, now, that the amount of privately held securities were reduced without any offsetting change in the quantity of money. Such a reduction could be brought about by a capital levy of one-third on all securities, payable only in kind. In other words, the government could require that one-third of all privately held securities be turned over to it. In what respects would the effects of such a policy differ from the effects of the open-market transactions described in Figures 4 and 5? Examination of the figures reveals that the interest rate, the volume of real investment, the real value of cash balances, and the other real variables of the system are affected in exactly the same way by a one-third levy in kind upon all securities as by a central-bank purchase of the same amount of securities. The nominal quantity of money is of course larger when the securities are acquired by purchase than when they are acquired by taxation. But the real value of bank balances is exactly the same, in the new position of equilibrium, in both cases. Thus, the only difference between the effects of the two means of acquiring the securities is a difference in the level of prices and costs. The price level is higher when the securi-

ties are acquired by purchase than when they are acquired by taxation. In all other respects the two situations are identical as far as the final results are concerned.

The foregoing example reveals the close analogy between central-bank security purchases and a capital levy on securities. In the system investigated above, a purchase of securities by the central bank is a means of reducing the real value of privately held wealth and operates just as effectively in this direction as a corresponding capital levy payable in kind. Indeed, the central bank's power to alter the equilibrium interest rate arises exclusively from its influence on the real value of privately held securities.

Through its power to change the interest rate, the central bank can also affect the rate of growth of the economy as a whole. At each different equilibrium interest rate full-employment saving is of course equal to full-employment investment, but the amount of real saving and investment varies with variations in the equilibrium interest rate. When the equilibrium rate is increased, the economic system comes into balance at a lower real value of investment and saving; and, when the equilibrium rate is reduced, the real value of saving and investment tends to increase. By purchasing securities, the central bank can reduce the real value of private wealth, thereby increasing the propensity to save and causing the system to attain a new equilibrium at a permanently lower interest rate and a permanently higher rate of capital accumulation. In a similar manner, the bank, through sales of securities, can increase the real value of private wealth, lower the propensity to save, raise the equilibrium rate of interest, and reduce the rate of capital accumulation.

Whether the bank has a substantial influence or only a negligible influence upon the rate of growth of the system depends upon its authority to buy and sell securities and upon the magnitude of the saving-wealth relation. If the saving-wealth relation is large, so that the propensity to save increases or decreases appreciably as the real value of private wealth falls or rises, and if the bank is authorized to buy and sell securities in large quantities, then the rate of growth may be affected to a considerable extent by central-bank policy. In practice, however, there will usually be an institutional barrier to the amount of securities the bank can sell; it cannot sell more securities than it owns. And this means that, when the bank has divested itself of all its securities, it has no further power to raise the equilibrium interest rate and lower the rate of growth. There may be a similar barrier to the amount of securities the bank can purchase, since only certain types of assets are eligible for the bank's portfolio. If the bank has acquired all the assets it is authorized to purchase, no further reduction of private wealth, and no further increase in private saving, can be accomplished by central-bank activity in the securities market.

In terms of the theory set out above, we may say that the central bank's power over the equilibrium interest rate and the equilibrium rate of growth will usually be determined by institutional arrangements which prevent it from purchasing more than a small fraction of private wealth or from selling more assets than it possesses. This might mean, for example, that the institutional arrangements were such that the value of λ would have to lie between 0.9 and 1.0. In most countries these institutional limits may well be so narrow that the actual power of the central bank to in-

fluence the equilibrium of the system is negligible. Nevertheless, if saving depends upon the real value of private wealth as described in the saving-wealth relation, the rate of interest must be regarded as partly a monetary rate. For, if the institutional limits to central-bank action were removed or reduced, the possible variation in the equilibrium interest rate which could be brought about by the central bank would be correspondingly increased.

APPENDIX

The geometrical methods employed in the text of this paper were not sufficiently powerful to deal with some of the more difficult problems encountered, particularly the dynamic problems. I am therefore adding an analytical appendix. The symbols used in this appendix have the following meanings:

- r represents the rate of interest, or the yield on common stock
- m represents the real value of private money holdings
- a represents the real value of all common stock, whether held by private owners or by the central bank
- λ represents the proportion of the total supply of common stock held by private owners
- w represents the real value of all privately held wealth, including both money and common stock
- S represents the real value of current saving
- I represents the real value of current investment

The amount of real saving out of a full-employment income is assumed to depend upon the real value of private wealth as well as upon the rate of interest, and we may accordingly write $S = S(r, w)$. Investment, under conditions of full employment, is assumed to depend only upon the rate of interest, and the investment function may therefore be written as follows: $I = I(r)$. If real national income under conditions of full employment is y_0, and if a proportion, c, of this consists of business profits, the real value of all common stock will be the capitalized value of these profits, thus: $a = cy_0/r$. The only remaining functional relation to be defined is the liquidity-preference function. Let $L(r)$ be such a function, indicating the proportion in which asset-holders as a group wish to hold money and common stock. With the aid of these definitions we may now write down the following system of equations:

$$\left.\begin{aligned} S(r, w) &= I(r), \\ L(r) &= \frac{m}{\lambda a}, \\ w &= \lambda a + m, \\ a &= \frac{c y_0}{r}. \end{aligned}\right\} \qquad (1)$$

The first of equations (1) expresses the condition that, in equilibrium, full-employment saving must equal full-employment investment. The second equation says that the rate of interest must be such that the desired proportion between money holdings and security holdings on the part of the owners of private wealth is equal to the actual proportion. The third equation is an identity, defining the real value of private wealth as the sum of private money holdings and private security holdings. Finally, the fourth of equations (1) says that the real value of all common stock is the capitalized value of business profits, where the capitalization is done at the prevailing rate of interest, r.

If the value of λ is given, equations (1) are sufficient to determine the equilibrium values of the four variables r, w, m, and a; i.e., the equations determine the rate of interest, the total real value of privately held wealth, the real value of money balances, and the real value of all common stock. The price level does not enter explicitly in equations (1), since all variables are in real terms. Nevertheless, price movements are implicitly taken into account through movements of m, the real value of the money supply. In the absence of open-market transactions, indeed, m can change only by means of general inflation or deflation.

Security purchases or sales by the central bank are indicated in equations (1) by changes in the value of λ. An increase in λ, for example, indicates a larger proportion of total securities in private hands and hence signifies security

sales by the central bank. Changes in λ will obviously alter the equilibrium values of all our variables. In order to see how a central-bank sale of securities affects these equilibrium values, we may differentiate (1) with respect to λ, as follows:

$$\left.\begin{aligned} (S_r - I_r)\frac{dr}{d\lambda} + S_w\frac{dw}{d\lambda} &= 0, \\ -\frac{1}{\lambda a}\frac{dm}{d\lambda} + L_r\frac{dr}{d\lambda} + \frac{m}{\lambda a^2}\frac{da}{d\lambda} &= -\frac{m}{\lambda^2 a}, \\ \frac{dm}{d\lambda} - \frac{dw}{d\lambda} + \lambda\frac{da}{d\lambda} &= -a \\ -\frac{a}{r}\frac{dr}{d\lambda} - \frac{da}{d\lambda} &= 0 \end{aligned}\right\} \tag{2}$$

Solving equations (2) for

$$\frac{dr}{d\lambda}, \quad \frac{dm}{d\lambda}, \quad \frac{dw}{d\lambda}, \quad \text{and} \quad \frac{da}{d\lambda},$$

we find

$$\left.\begin{aligned} \frac{dr}{d\lambda} &= -\frac{S_w}{\Delta}\left(\frac{1}{\lambda} + \frac{m}{\lambda^2 a}\right), \\ \frac{dm}{d\lambda} &= \frac{1}{\Delta}\left\{(S_r - I_r)\frac{m}{\lambda^2 a} - aS_w L_r\right\}, \\ \frac{dw}{d\lambda} &= \frac{1}{\Delta}(S_r - I_r)\left(\frac{1}{\lambda} + \frac{m}{\lambda^2 a}\right), \\ \frac{da}{d\lambda} &= \frac{1}{\Delta}\frac{aS_w}{r}\left(\frac{1}{\lambda} + \frac{m}{\lambda^2 a}\right). \end{aligned}\right\} \tag{3}$$

The symbol Δ in equations (3) represents the basic determinant of the system, i.e.,

$$\left.\begin{aligned} \Delta &\equiv \begin{vmatrix} 0 & S_r - I_r & S_w & 0 \\ -\frac{1}{\lambda a} & L_r & 0 & \frac{m}{\lambda a^2} \\ 1 & 0 & -1 & \lambda \\ 0 & -\frac{a}{r} & 0 & -1 \end{vmatrix}, \\ &\equiv (S_r - I_r)\frac{1}{\lambda a} + S_w L_r - \frac{S_w}{r} - \frac{mS_w}{\lambda a r}. \end{aligned}\right\} \tag{4}$$

The subscripts in equations (3) and (4) indicate differentiation of the S, I, and L functions with respect to the variable appearing in the subscript. I assume the system is stable in the classic sense that an increase in the rate of interest creates an excess of potential saving over potential investment; this implies that $S_r - I_r$ is positive. The saving-wealth relation is represented in (3) and (4) by S_w, which is negative, indicating that an increase in the real value of private wealth reduces real saving. The slope L_r of the liquidity-preference schedule is assumed to be negative, which implies that an increase in the rate of interest reduces the desired ratio between money and securities.

With the given signs of S_r, I_r, etc., one can see from (4) that Δ is a positive determinant. Moreover, the direction of change of most of the variables of the system can be readily determined. Thus, (3) shows that $dr/d\lambda$ is positive, $dw/d\lambda$ is positive, and $da/d\lambda$ is negative. This means that open-market sales of securities have increased the rate of interest, increased the real value of private wealth (cash and securities combined), and reduced the real value of the total supply of common stock. The only change whose sign is indeterminate is $dm/d\lambda$, the change in the real value of private money holdings. The reason for this indeterminacy is not far to seek: the central-bank sales of securities have reduced private money balances, but the real value of the remaining private balances have subsequently been increased through a general deflation. The final position of real money balances thus depends upon the relative strength of these opposing forces. But whatever happens to the real value of privately held money, equations (3) show that privately held wealth as a whole has been increased by the central bank's sales of securities. The increase in the real value of private wealth has reduced the rate of saving, and it is this reduction of saving which accounts for the permanent rise in the equilibrium rate of interest.

Thus far I have investigated the stationary or equilibrium values of the system without saying anything about the dynamic process of adjustment. I shall conclude this appendix with a few remarks concerning the behavior of the variables through time, during intervals when the system is not in equilibrium.

Consider, first, the behavior of prices when total demand is different from productive capacity. The difference between demand and productive capacity is measured, of course, by the difference between potential full-employment saving and potential full-employment investment. If the former exceeds the latter, demand for goods and services falls short of productive capacity, and prices and costs accordingly tend to decline. Conversely, if full-employment investment exceeds full-employment saving, total demand exceeds capacity, and both prices and costs rise. In the absence of new borrowing or lending by the banking system, however, an increase in prices is equivalent to a fall in the real value of money balances, and the time movement of the general price level may therefore be described in terms of movements in the value of money. As a first dynamic postulate, then, I write:

$$\frac{dm}{dt} = k_1 [S(r, w) - I(r)]. \qquad (5)$$

Equation (5) says that the price level tends to fall, and the real value of money balances tends to rise, whenever potential saving exceeds potential investment. Likewise, prices rise, and the real value of money balances falls, when potential saving falls short of potential investment. The speed of the price movement, in both cases, is assumed in (5) to be proportional to the size of the inflationary or deflationary gap, and the constant, k_1, represents this speed of adjustment.

So much for the general price level in the commodity-and-service market. Consider next the movement of prices in the securities market. I assume, as I indicated in the text, that the securities market is dominated by transactions in old securities rather than by supply-and-demand conditions in the new-securities market. Specifically, I assume that security prices tend to rise whenever asset-holders on balance attempt to shift from money to securities and that security prices fall when asset-holders attempt a shift in the opposite direction. The attempted shift, in turn, depends upon whether the actual ratio of cash to securities is higher or lower than the desired ratio, as indicated by the liquidity-preference function. Since a rise in security prices is equivalent to a fall in the rate of interest, our second dynamic postulate may be written

$$\frac{dr}{dt} = k_2 \left[L(r) - \frac{m}{\lambda a} \right]. \qquad (6)$$

In words, equation (6) says that the rate of interest rises, which means that security prices fall, when the desired ratio of money to securities exceeds the actual ratio. And, conversely, the rate of interest falls when the desired ratio is less than the actual ratio.

Equations (5) and (6) are the only equations of adjustment that we shall need. These two equations are the dynamic counterpart of the first two of equations (1). They do not form a complete system, however, since we have only two equations in four unknowns. Before we can solve our dynamic equations, we must have two more equations. The two missing equations are the third and fourth equations of our static system (1). These are merely definitional equations and are assumed to be satisfied at any moment of time, without lag. The third equation defines private wealth at a given moment as the sum of private security holdings and private money holdings, while the fourth equation defines the rate of interest as the yield on securities. The complete dynamic system is as follows:

$$\left.\begin{aligned} \frac{dm}{dt} &= k_1 [S(r, w) - I(r)], \\ \frac{dr}{dt} &= k_2 \left[L(r) - \frac{m}{\lambda a} \right], \\ w &= \lambda a + m \\ a &= \frac{c y_0}{r}. \end{aligned}\right\} \qquad (7)$$

Equations (7) cannot be explicitly solved, since we do not know the exact form of the functions S, I, and L. I shall therefore make a linear approximation of (7), which will be valid only for small deviations from the equilibrium values of the variables. If r_0, w_0, m_0, and a_0 represent the equilibrium values, we may write, as such a linear approximation,

$$\left.\begin{aligned}
\frac{dm}{dt} &= k_1(S_r - I_r)(r - r_0) + k_1 S_w (w - w_0), \\
\frac{dr}{dt} &= -k_2 \frac{1}{\lambda a}(m - m_0) + k_2 L_r (r - r_0) + k_2 \frac{m}{\lambda a^2}(a - a_0), \\
0 &= (m - m_0) - (w - w_0) + \lambda (a - a_0), \\
0 &= -\frac{a}{r}(r - r_0) - (a - a_0).
\end{aligned}\right\} \quad (8)$$

The solution of (8) takes the form

$$m = m_0 + A_1 e^{\rho_1 t} + A_2 e^{\rho_2 t}, \quad (9)$$

with similar results for r, a, and w, where A_1 and A_2 depend upon the initial values of the variables, and where ρ_1 and ρ_2 are the roots of the following equation:

$$\begin{vmatrix}
-\rho & k_1(S_r - I_r) & k_1 S_w & 0 \\
-\frac{k_2}{\lambda a} & k_2 L_r - \rho & 0 & \frac{k_2 m}{\lambda a^2} \\
1 & 0 & -1 & \lambda \\
0 & -\frac{a}{r} & 0 & -1
\end{vmatrix} = 0. \quad (10)$$

Equation (10) may be expended in powers of ρ as follows:

$$\rho^2 + \left(\frac{k_2 m}{\lambda a r} - k_2 L_r - k_1 S_w\right)\rho + k_1 k_2 \Delta = 0, \quad (11)$$

where Δ is the basic determinant of the static system, (1).

The coefficients of the powers of ρ in equation (11) are positive, which means that the real parts of the roots of equation (11) are all negative. Thus the dynamic system is stable, for small deviations from equilibrium, regardless of the numerical values of L_r, S_w, etc. In other words, if the liquidity-preference function, the saving function, and the investment function do not alter their form or position as prices rise or fall, the dynamic system will eventually reach a stationary or static position. This does not mean, of course, that an economic system in which the saving-wealth relation is operative will always be a stable system in reality; for equations (7) and (8) have made no allowance for expectations, and such expectations may exert a strongly destabilizing influence on the system. If prices of commodities are rising, for example, consumers and producers may anticipate further price increases; if so, saving will probably decline and investment will increase, thereby widening the inflationary gap and accelerating the price rise. Likewise, if security prices are rising, asset-holders may revise downward their estimate of what constitutes a normal ratio between money and securities; and, if they do, the resulting attempt to shift from money to securities will cause a further rise in securities prices. These possibilities suggest that equations (7) and (8) are stable only in a narrow sense.

Assuming that the system is stable, we may inquire, in conclusion, about the nature of the approach toward equilibrium. Is the solution of equation (8) cyclical or noncyclical? The answer to this question depends upon the roots of equation (10) or (11). The dynamic system will not be cyclical unless these roots are complex numbers. This means that $b^2 - 4c$ is negative, where b is the coefficient of ρ in (11) and c is the constant term. I leave it to the reader to prove the following propositions: (1) the roots of equation (11) may be either real or complex, which means that the dynamic system may or may not have a cyclical solution. (2) If k_1 and k_2, the speeds of adjustment in the commodity market and the securities market, respectively, are decidedly different in magnitude, the roots are likely to be real and the dynamic system is thus likely to be a noncyclical system. (3) If $S_r - I_r$ is large, so that a small rise in the rate of interest creates a substantial deflationary gap, the system will probably be cyclical.

UNITED STATES MERCHANT MARINE POLICY AND SURPLUS SHIPS

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I

IT IS now five years since the conclusion of World War II and of the greatest shipbuilding program in history. It is nearly four years since the enactment of the Merchant Ship Sales Act of 1946.[1] The American merchant marine now consists very largely of the war-built vessels. Of the privately owned, American flag, dry-cargo fleet on December 31, 1949, 654 ships, amounting to 6,873,700 deadweight tons, out of 727 ships of 7,367,100 deadweight tons, had been built since 1940.[2] Of the vessels in the United States Maritime Commission Reserve Fleet anchorages on February 28, 1950, 2,181 out of 2,229 were war-built.[3] Clearly the manner of disposal of the great war-built fleet has been, and will continue to be, of great importance to the American shipping industry. Furthermore, both sold and unsold vessels are of great significance for the national defense. Hence it is worth while to examine the effects of American ship disposal policy (1) on development of the American merchant marine; (2) on national preparedness for defense; and (3) on world ocean traffic and foreign shipping.

The origin of this problem lies in the very great shipbuilding achievement of World War II. Production reached a peak in 1943, when 19,210,000 deadweight tons were delivered, a quantity in excess of all the tonnage delivered in the United States from 1914 through 1938 and equal to one-quarter of the 80,600,000 deadweight tons under all flags on September 1, 1939.[4] The achievement may be summarized as in Table 1.

TABLE 1*

Major Types	No.	Deadweight Tonnage (In Thousands)
USMC standard C types	521	5,161
Liberty ships	2,708	29,182
Victory ships	414	4,492
Passenger-cargo ships	20	188
Tankers	705	11,365
Minor types†	727	2,601
Military types‡	682	3,303
Total	5,777	56,292

* Source: Gerald J. Fischer, *A Statistical Summary of Shipbuilding under the United States Maritime Commission during World War II* ("Historical Reports of War Administration, USMC," No. 2 [Washington, D.C.: Government Printing Office, 1949]), pp. 41–43.

† Barges, floats, coastal cargo, coastal tankers, concrete cargo ships, ore carriers, tugs, etc.

‡ Transports, tank carriers, baby aircraft carriers, tenders, frigates. Some of these were large vessels. A few of the aircraft carriers have been converted into modern fast freighters similar to the C_3 design.

During the war a number of these ships were lost by enemy action or the perils of the sea; but losses were low in relation to the total production. Thus the total fleet awaiting disposition in 1946, including some old vessels, amounted to 58,000,000 deadweight tons compared with a prewar fleet of 11,500,000 deadweight tons.[5] There were some 411 "C"

[1] 60 Stat. 41, c. 282, passed March 8, 1946.

[2] *Merchant Marine Study and Investigation, Senate Report 2494* (81st Cong., 2d sess. [Washington, D.C.: Government Printing Office, 1950]), p. 155 (hereafter cited as the "Magnuson Report"). The figures include seagoing vessels of 1,000 gross tons and over and exclude Great Lakes and inland vessels and also special types such as tugs and barges.

[3] *Ibid.*, p. 157.

[4] *Ibid.*, p. 126.

[5] *Ibid.*, p. 125.

type ships, 2,380 Liberties (including 58 Liberty tankers), 439 Victories, and 390 T2 tankers.[6] Obviously, the disposal of such a fleet is a matter of very great significance.

II

The Merchant Ship Sales Act of 1946 was based on the report prepared by the research staff of the Harvard Graduate School of Business Administration under contract with the Navy and the Maritime Commission and submitted in June, 1945.[7] That report was noteworthy in that it was the first scholarly treatment to recognize fully the dual transportation and military functions of modern merchant fleets and to propose a realistic policy for reconciling these highly diverse objectives during the life of the present war-built fleet.

The authors had before them the confused performance of the United States Shipping Board after World War I.[8] That body, which controlled a government fleet of 1,792 ships aggregating 11,000,000 deadweight tons, some of indifferent quality, had as its major objective the rejuvenation of the American merchant marine, which had been dying before the war. The desirability of maintaining, either in operation or in lay-up, a strategic reserve of adequate size was hardly considered. The board acted slowly and therefore largely missed the 1919–20 boom in ocean freights and vessel prices. That boom, like the one of 1945–48, was based on a temporary shortage of tonnage in the hands of competing maritime nations and on abnormal postwar traffic. But in 1920 freight rates broke precipitously, thus initiating the crisis of the twenties in world shipping. By late 1921 the index of ocean rates from United States Atlantic ports to Europe had reached 30 per cent of the January, 1920, level; and by mid-1923 the figure stood at 20 per cent.[9] Thereafter recovery was very slow, and in 1930 a supercollapse began.

The policy of the board was to feed ships to United States shipping firms, as and when possible, at prices declining as opportunities for profitable employment vanished. Some of the initial sales were at prices as high as $200 per deadweight ton.[10] The average price of sales for operation for the period up to June 30, 1921, was $149 per ton, but in the fiscal year 1922 it fell to $23 and ultimately reached a low of $5 in 1931. Those firms which bought early in many instances came to regret their temerity; those which waited to buy at low prices, and conversely which could secure subsidies as well, were able to establish themselves. The possibilities of a similar debacle has restrained some American shipping firms from purchasing during the last five years.

The Harvard group found the following difficulties in the post–World War I policy: (1) The government and the industry underestimated the recuperative and competitive powers of foreign shipping and overestimated the traffic potential. (2) The value of a war-built fleet to commercial owners was overestimated, with the result that initial high prices restricted sales or bankrupted

[6] U.S. Maritime Commission, *Annual Report, 1949* (Washington, D.C.: Government Printing Office, 1950), pp. 75–76.

[7] *The Use and Disposition of Ships and Shipyards at the End of World War II* (Washington, D.C.: Government Printing Office, 1945) (hereafter cited as the "Harvard Report"). The authors were James W. Culliton, Harvey P. Bishop, James M. Knox, and Paul F. Lawler.

[8] There is an excellent summary in *ibid.*, Appendix A.

[9] *Ibid.*, p. 222.

[10] Deadweight tonnage is the capacity for cargo, fuel, and stores at the assigned load line.

owners, whereas later forced sales of unneeded vessels contributed to the prolonged depression in the freight market. (3) It proved to be difficult to find suitable American owners to build up the American merchant marine and buy the ships. To this may be added the optimism, shared by all, that war would not again recur and hence that a substantial reserve was not required. Unfortunately, World War I ships which had been sold at $5 per ton or scrapped at $1 per ton in the late twenties were worth $200 per ton or more in 1941 and 1942, and vessel shortages gravely imperiled American and allied defense.

The Harvard group believed that it was essential for the future to formulate a realistic program based on the place of the United States in the postwar world, that a carefully worked-out basic plan should be prepared and widely advertised, and there should be some guaranty of adherence thereto, and that the reserve fleet should not be a "wastebasket" reserve.[11] They accordingly recommended in summary that the government should (1) sell ships rapidly; (2) fulfil commitments, actual or implied, to allied powers to enable them to restore their war-shattered merchant fleets; (3) refrain as a general rule from operating commercial services; (4) adopt a one-price policy and make it firm over time; and (5) put some ships in reserve and sterilize them.[12]

They also recommended that all ships, except Liberties, under fifteen years of age should be priced at estimated postwar reproduction cost in foreign yards, less annual depreciation at 5 per cent. The expenses of repairing war damage should be paid by the government. The inferior Liberty ships should be specially priced at the estimated world market at a flat rate. After meeting all contractual foreign obligations, ships generally should be offered subject to the following priorities: (1) United States flag firms; (2) the reserve fleet; (3) foreign operators. Liberties and T2 tankers should be offered freely at home and abroad. Vessels might be bareboat chartered to meet urgent needs, but the charter rate should be discouragingly high, so as to prevent the charter policy from interfering with sales. Finally, there should be an early cutoff date for both sales and charters, after which the remaining ships should be sterilized or scrapped, depending on their individual condition.

The statute was not dissimilar. Again the merchant marine policy of the acts of 1916, 1920, 1938, and 1946 was reaffirmed: namely, that there should be a privately owned and operated merchant marine adequate to meet the needs of American commerce and defense. There has been little sentiment for public ownership; indeed, the freighting activities of the Military Sea Transport Service have been under congressional attack. To re-create the private marine, reliance was placed on sales from the government fleet, backed up in some cases by subsidies. With respect to sales, a price formula was adopted consisting of 50 per cent of the prewar domestic cost for each class, adjusted for (1) normal annual depreciation at 5 per cent plus war service depreciation at 3 per cent; (2) allowances to bring ships up to standard condition; and (3) adjustments for special features. For tankers the percentage was put at 87.5 per cent, and the depreciation rates at 5 and 4 per cent, respectively. In addition, for all classes floor prices were established,

[11] Harvard Report, p. 266.

[12] *Ibid.*, pp. 132–40.

consisting of 35 per cent of war cost, defined as average cost in 1944 excluding defense items. For Liberties and tankers the floors were 31.5 and 50 per cent, respectively. As a practical matter the floor price is and has been controlling in most cases.

On this basis the Maritime Commission entered the postwar period with list prices for its major vessel categories as shown in Table 2. It should be noted that the pricing formula made no allowance for comparison on the basis of deadweight, bale cubic capacity, or any other measure of vessel desirability. This failure has proved to be a serious defect.

TABLE 2*

Type	Unadjusted Stat. Price	Floor Price	Floor Price	
			Per Bale (Cu. Ft.)	Per Deadweight Ton
C1A	$ 970,000	$ 912,859	$2.04	$123
C1B	970,000	912,859	2.02	100
C2	1,050,000	957,818	1.75	104
C3	1,230,000†	1,280,730	1.75	104
C4 SA4	1,650,000	1,547,338	2.31	99
Victory (15 knots)	970,000	879,157	1.94	81
Victory (17 knots)	1,065,000	1,005,431	2.22	92
Liberty	639,000	544,506	1.09	50
T2 SEA 1 (tanker)	2,026,500	1,505,352	.....	90

* Source: *Federal Register*, August 17, 1946. Calculated bale cost per bale cubic and per deadweight ton by Frazer Bailey in *Merchant Marine Study and Investigation*, Part 4, p. 813, with special comment on the C4 by G. H. Helmbold, Chief, Bureau of Government Aids, USMC, p. 841.

† Not effective because under floor price.

There were certain other important provisions. Payment was to be 25 per cent down, with the balance in twenty instalments plus interest at 3.5 per cent. The Maritime Commission was to pass on the financial and business qualifications of buyers. Citizens were to have priority. For foreign sales it was necessary that the Secretary of Defense certify that the vessels were not required for reserve purposes. On at least one occasion the Navy thus prevented for some months a transfer of tankers strongly favored by the Department of State.[13]

III

What has been the effect of this policy on the United States merchant marine? In summary, the results appear to have been as follows. (1) The fleets of the liner companies in United States foreign trade have been filled and strengthened with large numbers of the best cargo ships, mainly C3's and C2's and an occasional Victory. The twelve subsidized contractors, who have had comparatively little to worry about in the future because of their established position and the expectation of renewed government aid under the Merchant Marine Act of 1936, have found it worth while to renew their fleets completely. In addition, a number of unsubsidized American berth operators bought nearly complete fleets. One, Waterman Steamship Company, purchased 45 C2's at a total cost of about $45,000,000.[14] (2) Tramp-ship

[13] Committee on Public Administration Cases, *Sale of Tankers Foreign*, a forthcoming case study.

[14] Statement of W. B. Garner, executive vice-president (Magnuson Report, Part IV, p. 790).

operators, who normally function by acting as agents or managing agents for foreign-flag ships, engaged extensively in tramping with chartered USMC vessels during 1946, 1947, and 1948. The tramp-ship operators were reluctant to buy, but some did. The demand for chartered tonnage has now evaporated. (3) The coastwise and intercoastal firms have been aided very little. For the most part, these services have been conducted on a temporary basis with bareboated government tonnage.

The over-all effect of the sales has been good. The privately owned merchant fleet on March 31, 1950, amounted to 14,169,000 deadweight tons—up 36 per cent from the 1939 level.[15] The tanker component was up 66 per cent; the dry cargo, only 18 per cent. It is a new young fleet of good speed. In contrast to prewar conditions, the foreign trade is the main stay. On March 31, 1950, of the dry-cargo ships, 542 of 5,712,000 deadweight tons were so employed compared with 151 of 1,418,000 deadweight tons in the domestic trades. American tankers were also widely employed in the foreign trade. Thus, with respect to liners and tankers, the vessel sales, plus some post-war construction, have put United States operators in a stronger position than they have held at any time since 1860. This is a considerable achievement.

The results with respect to tramping, which was conducted mainly in 11-knot Liberties, were less satisfactory. Although wartime rates had not risen so fast or so much as in World War I, they were still up substantially in 1945. In the liner services to the United Kingdom from United States North Atlantic ports, rates on wheat increased 482 per cent over 1938; on provisions, 45 per cent; on lumber, 78 per cent.[16] Voyage grain charters in the same trade, which had ranged from $2.79 to $6.08 per 20 hundredweight in the years 1937 and 1938, rose to as high as $10 in 1946. Because postwar demand was inelastic and strong, such rates then covered the heavy costs of United States flag operation. Indeed, for the first time in many years, American flag ships were freely chartered in the cross-trades of the world, such as from the River Plate to the United Kingdom/Continent.[17] But if the Americans could make money, how much more could the necessitous Europeans make, especially with United States Liberties! Accordingly, there was a strong foreign demand for these ships. Hence by 1949 rates had fallen drastically. In the United Kingdom trade they reached the neighborhood of $5 per ton in late 1949. These rates now became generally unremunerative for United States flag ships, and the remaining vessels in the service were sustained only by the portion of the Economic Cooperation Administration traffic which was carried at differentially higher rates in American bottoms. Accordingly, the number of government Liberties under bareboat charter dropped from 1,073 in June, 1947, to 250 in June, 1949.[18]

The tramping business was generally suffering under liner competition by 1949. Foreign-flag tramps were also much more active. In the British ship market war-built Liberties began to fall out of favor. In May, 1950, ex-Liberties were selling at only £110,000, compared with as much as £192,500 in January, 1949.[19] Indeed, all vessel prices were off.

[15] *Ibid.*, pp. 6 and 135.

[16] *Ibid.*, p. 253.

[17] United States ships were loading grain in the Plate at $16.75–$17.00 per ton in March and April, 1947.

[18] U.S. Maritime Commission, *Annual Reports* for 1948 and 1949.

[19] *Fairplay*, July 27, 1950, p. 46.

Fairplay estimated the price of a new, ready, standard 9,500 deadweight ton motorship at £31 10*s.* per ton deadweight in June, 1950, compared with £44 15*s.* in December, 1948.[20] American ships were thus overpriced and were neither sold nor chartered except for ECA business.

The ship sales policy has been least satisfactory in the domestic trades, which have recently been through the worst crisis in their long history. The two primary difficulties were the effectiveness of rail and truck competition and the sharp rise in the expenses of conducting the business, especially port costs. The domestic shipping industry could point to no such technical improvement as rail dieselization. Furthermore, rail rates rose slowly in relation to costs, and many old water-competitive rates structures now became so low relative to vessel operating expense as practically to bar the employment of tonnage. Some of the important prewar carriers, notably Clyde, Merchants and Miners, and Eastern, either liquidated or shifted to offshore services. In the important intercoastal trade the number of privately owned vessels employed dropped from a prewar 143 to 26 in 1950.[21] The ships are, of course, faster and larger. The principal intercoastal operators did, however, find it possible to resume service with bareboat-chartered government tonnage, of which 29 ships have recently been so employed. The coastwise trades have suffered even more, and many firms could not even afford to charter. Thus on December 31, 1949, there were but 72 privately owned ships amounting to 588,000 deadweight tons and 6 chartered ships, compared with 235 ships of 1,187,000 deadweight tons privately owned in 1939.[22] Only 16 of the above 72 ships privately owned were in general cargo service, the rest being in the bulk trades, chiefly coal, which were rather active. Thus the war-built fleet proved to be of little value to the sadly beset general freighting business on these routes.

The net result was that by December 31, 1949, the Commission had sold or approved for sale for United States flag operation 700 ships, consisting of 418 large-type dry cargo types, 26 coastal types, 255 tankers, and 1 passenger ship, for a net amount of about $750,000,000.[23] Of the highly desirable C3's (12,438 dwt., 16.5 knots), all 88 on the Commission list went to United States liner operators.[24] Of the C2's (9,153 dwt., 15.5 knots), 124 went to United States operators, 8 went to foreign flags, and 23 remained available. Of the smaller C1A's (7,413 dwt., 14 knots), and C1B's (9,137 dwt., 14 knots), United States firms took only 23, whereas foreigners bought 48, and 54 remained. None of the 43 fine C4 cargo carriers (14,863 dwt., 17 knots), which were designed by the American-Hawaiian Steamship Company especially for the domestic trades, had been sold either foreign or domestic. Of the Victory class (10,850 dwt., 15 or 17 knots), American firms had taken but 44 ships, mostly in lieu of the more desirable C3's and C2's. For tramping, foreign and domestic, 139 Liberties entered the merchant fleet. Finally, the large T2 tankers proved to be very popular in the postwar bulge in the oil business, all of the stock being

[20] *Ibid.*, p. 44.

[21] Magnuson Report, p. 4.

[22] *Ibid.*, p. 15.

[23] *Ibid.*, p. 51.

[24] *Ibid.*, p. 288. In describing the characteristics of the several classes, it should be noted that in each case there are many subclasses, each with slightly different characteristics.

sold, of which 187 went under the United States flag and 203 foreign. Most of the sales occurred in 1947, when conditions were favorable. By 1950 sales had largely dried up.

It may be concluded that the Commission was successful in selling its vessels on the strong postwar market, that by 1950 the American shipping industry was saturated with all the war-built vessels it could employ, and that United States owners secured most of the best ships. American shipping in the foreign trade has been especially invigorated, and domestically such activities as the Hampton Roads coal trade have been refurbished. Thus once again was restored a familiar situation, like that of the heyday of American shipping in the nineteenth century, when good cheap ships offset differentials in operating costs.

IV

It remains to consider the effects of the law on the national defence and on foreign shipping. As of December 31, 1949, the Commission had available 2,212 ships, of which 568 were still equipped as military auxiliaries. Of the total, 1,652 were Liberties and 292 were Victories. A number of these have since been restored to service in connection with the Korean War.

A major problem in United States merchant marine policy in the postwar period is the large *defense gap*, which may be defined as the difference between reasonable peacetime ship requirements and wartime requirements under conditions of maximum effort. Peacetime needs may be measured by (1) current employment in the private merchant marine, now about 1,200 ships, which fleet is artificially supported by subsidies, ECA, and the lack of full maturity on the part of European construction programs; (2) probable employment under normal conditions and with only the permanent subsidy program; and (3) employment without aids of any sort from the government. The latter two levels are highly conjectural but for purposes of discussion may be taken at 800 and 400 ships, respectively. Our choice obviously depends on the position of the United States in world affairs. On the whole, for the immediate future, there seems to be an opportunity to use commercially, with the aid of various props, some 1,200 vessels of the size here under discussion. This figure will be used for peacetime requirements.

Wartime needs are possibly easier to estimate on the basis of World War II experience. In that conflict the expanding fleet subject to United States control, which ultimately reached some 6,000 ships, was fully employed, except for some fleeting periods of slackness. In the first two years the pressure was severe. However, in late 1944 and in 1945 there were clear indications that ship availabilities were approaching the capacities of American ports and rail facilities, of American industry to supply cargo, and, most important, of foreign ports to discharge the freight. There was often severe congestion at both ends, or at least a threat of congestion which was met only by program curtailment. Though allowance must be made for the availability or unavailability of allied tonnage, the figure of 6,000 ships seems to be reasonable as a war requirement.

The defense gap is thus large—some 4,800 ships. This is too big a gap to be covered by peacetime operation under subsidy. A reserve fleet equal to some portion of the gap, say 2,000–2,500 ships, seems essential. The rest we must build if need arises. In this light, the current reserve fleet seems to be of reasonable

size. It is mainly a "wastebasket" fleet and is out of balance in being short of tankers and fast freighters. On the other hand, the best ships remain in operation in private American hands. Unless sales are continued on a substantial scale after January 15, 1951, which is the current cutoff date, it appears that the act will have effectively met this need.

The Ship Sales Act also greatly assisted the development of foreign merchant fleets during the period of rebuilding. This occurred through direct sales from the federal fleet (93 per cent of the tonnage sold) and through resale by American purchasers. All told, up to December 31, 1949, foreign flags received from the Commission 745 major-type cargo ships (including 589 Liberties), 203 major-type tankers, and 152 coastal-type freighters. Large takers were France, Greece, Italy, Holland, Norway, and Great Britain. Among these foreign sales were many, especially in the tanker group, to subsidiaries of American corporations. One result was that on January 3, 1950, American capital owned or controlled 4,200,000 deadweight tons of vessels under foreign flags.[25] Another important result of the foreign sales by the government was the appearance, earlier than otherwise would have been the case, of pressure on freight rates, especially in the bulk trades. By the same token, foreign flags earned considerably more foreign exchange than they otherwise would have done. Very few of these ships went to apparently unfriendly flags. In the European markets the Liberty vessels have served their purpose and are slowly becoming marginal. On February 27, 1948, authority to sell surplus ships to foreign flags was repealed, and the episode has ended.

[25] *Ibid.*, p. 69.

V

In conclusion, the Ship Sales Act has been extraordinarily successful in meeting the declared objectives. The Harvard group estimated that postwar demand for United States flag ships would be between 860 and 1,325 vessels, compared with an actual private fleet of 1,200 in early 1950.[26] Foreign sales were put at from 700 to 1,050, compared with 948 large-type vessels actually sold. The foreign-trade liner services have been re-equipped and at prices that have not been burdensome to the operators so far. Certain interests requiring bulk freighters for domestic or foreign trade have been satisfied. The entire tanker fleet has been sold into useful employment. Foreign obligations, actual and implied, have been met. Finally, a sizable reserve fleet exists, lacking, however, any tanker component and somewhat short of fast ships. All told, the program has been a great improvement on that of 1920.

Certain problems remain, of which the chief is how to deal with the services now maintained with chartered tonnage, and in which purchases seem unlikely because of economic conditions. Examples of these services are found in the Alaska trade, the intercoastal trade, and the coastwise business. The operators in these trades hold that vessels, especially the highly suitable C4's, are overpriced. There are also some marginal foreign-trade operations conducted with bareboated vessels. The great majority of owners, including the leading subsidized firms in the foreign trades, are opposed to further sales and charters and to any reductions in price to new purchasers. In general, this seems a reasonable point of view and is in accord with the Harvard recommendation that prices be firmly

[26] Harvard Report, p. 120.

maintained. On the other hand, the domestic services in particular have been a prime reservoir of ships and seamen. The matter of shipping in these trades is closely tied up with rail-rate policy and in particular with departures from the long-and-short-haul clause of the Interstate Commerce Act and with large blankets involving seaboard traffic. This is a country of long-haul rail traffic, and much of the ship-competitive business would probably be more than compensatory to the rail carriers.

There appear to be only two solutions viz., raising ship-competitive rail rates and reducing ship prices for domestic operation. Continued charter operation seems unwise as a matter of business incentive. Raising rates would be highly burdensome and in many cases unnecessary, considering rail costs. There does, however, seem to be justification for making some price adjustments for operation restricted to the domestic trades for the purpose of restoring these services and equalizing the treatment accorded foreign-trade and domestic-trade firms. Since a number of the ships are now in service under charter, the effect on rail traffic would not be severe. In this single instance a departure from the firm price policy appears justifiable.

Thus in a world of alternating war and peace, and of uncertain and varying national ship requirements, the policy on ship sales seems to have been a good and economical middle course between internationalism and extreme preparedness, and between the immediate needs of the Treasury and the possibilities of huge future wartime shipbuilding expenditures.

ADVERTISING, PRODUCT VARIATION, AND THE LIMITS OF ECONOMICS

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I

THEORIES of monopolistic or imperfect competition have become an accepted part of the orthodox body of economic doctrine since their first presentation in well-developed form by Professor Chamberlin, Mrs. Robinson, and Dr. Stackelberg less than twenty years ago.[1] They have been assimilated into the textbooks, and the marginal revenue curve has become part of the standard apparatus of economists. The pedagogic success of these theories has been remarkable. Even on the level of pedagogy, however, their success may be to a certain extent illusory.

Chamberlin's hope, as expressed in the subtitle of his book, was to achieve "a reorientation of the theory of value." Yet the new theories have not *replaced* the theory of pure competition or even the theory of pure monopoly. Monopolistic competition has rather tended to be identified as a separate type of market situation—occupying, along with oligopoly, an area midway between pure competition and simple monopoly. The theory appropriate to this mixed, impure, or imperfect market situation has been added to older theories that are presumably still appropriate in their own spheres. In short, what has been achieved, so far as most students are concerned, is not so much reorientation as elaboration. Another wing, or perhaps a porch, has been added to economic theory; but the structure retains its original form.

This outcome may be considered as a symptom of the deeper problem that is

[1] Edward H. Chamberlin, *The Theory of Monopolistic Competition* (Cambridge, Mass., 1933) (subsequent references will be to the 5th ed., Cambridge, 1946); Joan Robinson, *The Economics of Imperfect Competition* (London, 1933); Heinrich von Stackelberg, *Marktform und Gleichgewicht* (Vienna, 1934). For further references and notes on the development of the theories see Robert Triffin, *Monopolistic Competition and General Equilibrium Theory* (Cambridge, Mass., 1940), and J. K. Galbraith, "Monopoly and the Concentration of Economic Power," in *A Survey of Contemporary Economics*, ed. Howard S. Ellis (Philadelphia, 1948). The latest edition of Chamberlin's book contains a classified bibliography.

Chamberlin is the only one of the three writers cited in the text who deals explicitly with problems of advertising and product variation. For this reason, my paper is related much more directly to his work than to that of either Mrs. Robinson or Stackelberg.

Indeed, if Chamberlin's interpretation of Mrs. Robinson were accepted, her theory would have to be excluded from consideration in this article altogether, on the ground that "imperfect competition" does not encompass product variation (Chamberlin, *op. cit.*, pp. 191 ff., esp. pp. 205–9). My own view, which seems to coincide with that of Triffin (*op. cit.*, pp. 36–42), is that Mrs. Robinson was concerned with almost exactly the same central problems as Chamberlin, even though her approach to them was less direct. In what follows, therefore, I have used the terms "monopolistic competition" and "imperfect competition" interchangeably. (The contrary view on this point is stated strongly by George Stigler in *Five Lectures on Economic Problems* [London, 1949], pp. 12–13.)

Stackelberg's chief interest, on the other hand, was in the problems of what might be called business power arising in the relations of firms or individuals to one another when their numbers are small. These power relations may be affected by product variation and advertising, to be sure, but Stackelberg's discussion runs mainly in terms of "price determination" (*Preispolitik*) and "quantity determination" (*Mengenpolitik*) (*op. cit.*, p. 16).

the subject of this paper—namely, the *scientific* failure of these theories. I shall argue that, apart from such pedagogic merit as they may have, the theories of monopolistic and imperfect competition have not proved to be useful formulations, in the sense that Marshall's formulations were useful; that they have not directed attention toward significant and observable relationships. I shall argue, further, that this failure was not accidental; nor was it due to errors or deficiencies in the original presentation of the theories. On the contrary, it will be my contention that the problems to which these theories addressed themselves are, in their nature, unmanageable within the philosophical framework of economic theory in general. This argument requires some elaboration, especially as to what is meant by "the philosophical framework of economic theory." I shall proceed as follows:

1. A discussion of "scarcity" as the fundamental concept of economics—a concept which, although powerful, is applicable only to certain kinds of problems.

2. Interpretation of Marshall's economics in the light of the concept of scarcity. Although not an accurate description of reality, Marshall's theoretical scheme was a fruitful simplification.

3. Interpretation of the theory of monopolistic competition from the same point of view. It seems to describe reality more accurately than Marshall did, but it does not simplify.

4. Finally, a consideration of advertising and product differentiation as necessarily foreign to conventional economics: they are not problems of scarcity, in the sense outlined below.

II

Modern economics, from Hume and Adam Smith to date, shares a common philosophic framework. I do not mean to suggest that Hume and, say, Alfred Marshall or Joseph Schumpeter held the same attitudes toward life or conduct or love or beauty or justice or even public policy. This is unlikely. But economics, as a science or technique of analysis, embodies certain philosophical preconceptions that are to a degree independent of the personal attitudes of economists. For all their differences of opinion, recognized economists have raised the same questions in their professional work—and a philosophical position is to be recognized most clearly by the questions that it suggests.

The problem of scarcity lies at the heart of the philosophical position of economics. Indeed, for most economists the existence of such a problem seems so obvious and so important that it is hard to realize that any preconceptions are at issue. From the beginning, modern economics has conceived of the world as populated by consumers with unsatisfied wants, on the one hand, confronted with scarce resources for satisfying those wants, on the other. This idea has led directly to a conception of production as involving cost or sacrifice and of consumption as involving pleasure or utility. The economic problem, then, is how to make the best use of available resources in satisfying existing wants—realizing that different wants are competitive, so long as they depend for their satisfaction on the same resources, and that they cannot all be satisfied, since resources are limited. Consumption is the end and purpose of economic activity. The wants of consumers are taken to have an ultimate and self-justifying value, so that one can judge specific economic arrangements solely by their success in satisfying these wants. (Other social objectives have been recognized by many economists, to be sure, but not as a part of their theoretical structure.)

This is not the occasion for a general evaluation of these conceptions. We

should notice, however, that they are applicable at best only to certain kinds of situations. Wants that do not require scarce resources for their satisfaction are no concern of economics; this is generally recognized. The desire to hum a tune is not an economic problem—indeed, it is not likely to be a serious problem even from other points of view. Given minimum physical aptitudes, the tune will be hummed, and that is the end of the matter. There are other desires, however, which may constitute very serious personal and social problems but which are equally beyond the reach of economics. The desire to be loved, the desire for creative work, the desire for self-expression and growth—in fact, all the deepest and most pressing positive desires that human beings are likely to feel when not under the immediate influence of hunger, cold, and pain are largely of this nature. Such desires may require the use of scarce resources for their satisfaction, but the relation between the quantity of resources used and the degree of satisfaction attained is so uncertain and discontinuous that analysis in terms of the idea of scarcity is quite fruitless. The difficulty in these cases is not that the objectives are unclear—although that may also be true—but rather that the *means* that might be effective in reaching the objectives are not clear; they are not definable and are certainly not measurable.

Here we come closer to a general understanding of the limits of economics. The scarcity conception is concerned with the relationship of means to ends. When the means for attaining given ends are ample, there is no problem. When they are apparently not ample, but their nature cannot be specified (at least in terms of a recognizable notion of resources, which in principle are subject to measurement), there may very well be problems; but economic theory is not able to discuss them.

By the same token, if *ends* cannot be specified—or can be specified only vaguely—the scarcity conception is inappropriate. If people do not know what they want or care what they get, adaptation of means to ends is impossible. One use of resources is as good as another, under such circumstances—unless one appeals to some external, noneconomic standard of judgment.

Without delving further into the significance of the means-end relationship itself, we may say, in brief, that the philosophical position that underlies theoretical economics assumes such a relationship; and it assumes, further, that both the means and the ends can be defined clearly enough to permit an analysis that is quantitative in method, even when the entities conceived of have not actually been measured.

III

Once a philosophical framework has been established and its consequent set of implied general problems has been accepted, the task of theory is to simplify reality in a way that will facilitate the solution of those problems. It is the function of the intellect to simplify, and economic theory, like any other fruitful approach to reality, must involve simplification—and therefore falsification. Reality in its natural form, as raw sense impressions, is too complex and confusing even to be admitted into consciousness. The proper test of any theory is whether the simplifications that it introduces retain distinctions that are relevant and suppress those that are not. And the test of relevance can be made only in terms of the general philosophical framework within which the theory is

formulated. A fruitful theory is one that suppresses distinctions irrelevant to the problems posed by the philosophical position that underlies it, and emphasizes distinctions that can contribute to the solution of those problems. Some distinctions must be retained, if theory is not to simplify reality out of existence. Others must be suppressed, or the theory will not perform its task of simplifying, of reducing reality to manageable relationships.

If we conceive of the problem of scarcity in its most abstract form, there are two extreme and equally unprofitable approaches that might be taken. At one extreme we might recognize the crude fact that every unit of resources differs from every other and that each individual consumer is unique. Such radical empiricism would make it impossible even to begin to solve the problem of maximizing consumer satisfactions. At the other extreme, we might assume that all units of resources were identical and that all consumers were identical. Such an approach would simplify the problem out of existence. From this point of view, we may find a key to the success of classical economics precisely in its balance of suppressions and recognitions.

Marshall was the heir of the classical writers, and he shared their fundamental theoretical assumptions. In detail, Marshall's economics was very different from Mill's, as Mill's was from Ricardo's and his in turn from Adam Smith's. But beneath the differences there were great similarities.

Marshall's kinship with his predecessors is revealed more clearly in his technical apparatus than in the discussion that surrounds it. This is true in spite of the apparently paradoxical fact that the technical apparatus was at the same time his most original contribution to economics.[2] His main tools of analysis were the demand curve and the supply curve. Now the construction and use of such curves implies certain assumptions, most of which had also been implicit (with varying degrees of clarity) in the work of the earlier economists.

For the present purpose, it is sufficient to indicate these major theoretical assumptions in the following general terms:

1. Products were divided into an indefinite but presumably small number of distinct kinds, each of which was produced by a large number of firms.

2. Consumption and production were distinct activities in the sense that producers tried to maximize their incomes, taking the facts of consumption for granted, while consumers tried to maximize their satisfactions, taking the facts of production and income for granted.

3. Resources were classified into a limited number of categories—land, labor, capital, and organization or enterprise. Differences within each category were considered to be entirely quantitative, while differences between groups were mainly qualitative. Thus it was possible to speak of a definite quantity of land or labor, abstracting from differences in the quality of the different units within each group by somehow reducing these different units to a common standard of measurement. It was not possible, however, to assimilate land or labor to one another. (In the case of capital, where this rigid separation of resources into categories was hardest to maintain, the classical theory fell into serious difficulties from the beginning.)

4. An indefinite range of technical possibilities of transforming resources into commodities was thought to exist. At any moment (or, to speak differently,

[2] See J. M. Keynes, *Essays in Biography* (New York, 1933), pp. 190 ff.

at any given level of technological knowledge) these different technical possibilities could be represented as changes in the proportions in which the several factors of production (as listed above) were combined. One of the main functions of the businessman or entrepreneur was to make decisions affecting the proportions in which the factors were to be used.

5. Consumers were recognized as being diverse individuals. They had definite tastes and exercised them by choosing among commodities in a rational way. The justification of production was the satisfaction of these tastes.

The first three items in the above list are limiting assumptions; they are bold simplifications of reality. The last two, on the other hand, stay very close to the raw facts.

IV

The theory of monopolistic competition grew out of dissatisfaction with Marshall's premises. They seemed to leave out of account some of the most important facts of business behavior—in particular such facts as advertising, product variation, and nonprice competition. Was this dissatisfaction merely the delayed recognition of a deficiency in theory that had been there from the beginning? Or, on the other hand, was the difficulty mainly that the world had changed? Did economic life in the nineteenth century correspond reasonably well with Marshall's simplified picture? Neither of these alternatives quite meets the case.

It seems to me doubtful that there was ever any very close correspondence between Marshall's theoretical assumptions and reality. In fact, Marshall himself gives a strong impression to the contrary in the text (as distinguished from the diagrams and formal proofs) of his *Principles*. He was certainly not under the illusion that the ordinary business firm was in impersonal competition with a host of other firms all producing an identical product, in such a way that every firm was always able to dispose of its entire output without difficulty at the existing price.

Nevertheless, Marshall's theoretical scheme was useful. In the first place, the facts in certain important respects behaved *as if* his assumptions were correct. Second, the theory provided a useful standard of reference: the system of pure competition was a sensible (although not quite self-evident) objective of public policy.

Consider the position of the ordinary business firm in an industry characterized neither by pure competition nor by monopoly in the Marshallian sense. Such a firm faces two ways, toward the markets in which it buys resources and toward the markets in which it sells its products. In both sets of markets it is likely to be confronted by both monopolistic and competitive forces—and this was probably true also in the Victorian period. The resources that it uses are not identical in all respects with those used by other firms; nor are they wholly unique. Its products must compete with other products, but they may well be sheltered by a degree of differentiation.

The aim of such an ordinary firm is, speaking crudely, to buy cheap and sell dear—since profit is the margin between revenue and cost. But this statement ignores some of the most pressing decisions that actually occupy a businessman. Should the office be painted? Should a new second engineer be hired? How much should be spent next quarter for advertising? Would it be wise to sell bubble gum at the newsstand? In short,

the businessman must decide *what* to buy and *what* to sell. These two problems must be settled even in a world of pure competition, and in a world of monopolistic competition they become the center of attention.

In Marshall's theoretical system the problem of what to buy receives much fuller consideration than the parallel problem of what to sell. Indeed, the choice among various products is made by businessmen only in the interstices of Marshall's system—between one short period and the next, in effect. Firms do move from one industry to another in response to shifting profit opportunities, and in doing this they necessarily change their products. But this process is presented as a more or less passive adjustment to external conditions. The main focus of interest is the problem of combining the factors of production in the most effective way in order to produce a *given* product at maximum profit. Within any industry, the problem is what to buy —taking this to include determination of the proportions among various inputs; that is, the choice of methods of production.

I would suggest that in general this emphasis on the buying and producing, as distinct from the selling, aspect of business life was appropriate for Marshall's period (at least for the 1870's and 1880's, when the theoretical structure of the *Principles* was being formed.[3] This is not by any means to say that business life at that time approximated to the model of pure competition. Nor is it to say that aggregate demand was always strong enough to guarantee a ready outlet for producers. The point is quite different. The energies of businessmen may have been directed more largely to the buying and producing side of their operations, in bad years as well as in good, even though the markets in which they bought had few traces of pure competition. Furthermore, the markets in which they sold may also have deviated notably from the requirements of pure competition. There can be no doubt, for example, that the conditions of spatial competition in retailing precluded effective homogeneity of the final product in the past just as they do today. But the question is whether retailers in the nineteenth century devoted much of their energy to exploiting these conditions. My suggestion is that they did not.

If businessmen did in fact devote their energies largely to buying and producing, the conditions that confronted them and the methods that they used seem to have been rather far from those required for pure competition. Methods of production were changing rapidly in the Victorian age. The protection and discovery of trade secrets must have played a considerable part in business life. Apart from this, patents conferred legal monopoly power to some extent. Furthermore, the number of firms in manufacturing or commerce can never have been large enough, in relation to the size of the market, to insure pure competition in the supply of materials, transportation, or other intermediate products. The real estate market, in the nature of the case, must always have been impure. Oligopoly and oligopsony were prevalent then as now. In the labor markets a fair amount of monopsony pressure probably existed. The life of a businessman, then as now, was far more active than is suggested by the theory of pure competition.

One of the embarrassments of the theory of pure competition is that most

[3] The first edition of the *Principles* appeared in 1890. On the chronology of Marshall's thought see Keynes, *op. cit.*, pp. 183 ff. and 215 ff.

of the activity that businessmen describe as "competitive" would be quite unnecessary if the economic conditions of pure competition were fulfilled. Wheat farmers do not "compete" against one another. But it may be claimed as a virtue of Marshall's system—if the preceding argument is accepted—that the results of "business competition," under nineteenth-century conditions, were very similar to those of pure competition. Businessmen did not act like wheat farmers, but, to the extent that they "competed" (in their own meaning of the term), the outcome of their actions would approximate the outcome of pure competition in the wheat market. The more energetic businessmen are in improving their methods of production, the better for the consumers—and this is true even if the process includes stealing the trade secrets of rivals or developing trade secrets of one's own. Success in buying materials or resources cheaply is also likely to benefit consumers—even if the methods used may include monopsonistic pressure of various kinds. I take it that "business competition," in this sense—which has little in common with the atomistic competition of economic theory—is what Schumpeter referred to as "the process of creative destruction."[4] As long as it is directed mainly toward the buying and producing side of business it accomplishes many of the results that are attributed to pure competition in Marshall's system. For this reason, a technical apparatus based on the assumptions of pure competition yielded useful conclusions even though the assumptions were never fulfilled in reality.

As "business competition" is directed more largely toward selling, however, its results can no longer be assumed to approach those of pure competition. Indeed, an increase in the amount of competitive activity in the selling markets may have a contrary effect. There is no strong reason to believe that competitive pressure is beneficial to consumers when it is expressed in increased advertising budgets or larger public relations departments. In any case, whether beneficial or not, such an outcome—increased competition leading to higher costs—is quite contrary to the effects of increasing the degree of competition in the Marshallian sense. To the extent, therefore, that business energy is directed toward selling rather than toward buying and producing, Marshall's system does not yield useful conclusions.

As the attention of businessmen has been shifted toward selling, Marshall's system has also lost much of its former value as a standard of reference—a description of what *ought* to be. As long as consumers' tastes could be taken as given, the system of pure competition was a sensible goal of social policy.[5] In spite of all difficulties about interpersonal comparisons of utility and the like, it could be maintained that the model of pure competition represented a state of maximum consumer satisfaction in some useful sense. The classical and Marshallian systems were perhaps even more influential as standards than they were as descriptions. But when the attention of businessmen is directed toward changing the tastes of consumers, the standard loses its content. It can be claimed for pure competition (without salesmanship) that it would bring about an allocation of resources in accordance with

[4] Joseph A. Schumpeter, *Capitalism, Socialism, and Democracy* (New York, 1942), pp. 81 ff.

[5] I am not concerned here with the final merits of pure competition and consumer sovereignty as a social goal. I merely assert that such a goal is "sensible"—that is, it has meaning and gives adequate expression to a set of values that can be taken seriously.

consumers' demand; but if some resources are being employed for the purpose of *changing* consumers' demand, this claim must be dropped. All that can be said, under such conditions, is that the pattern of demand and the pattern of resource use are brought into correspondence with one another—but this is always true under any economic system, even the most arbitrary: if output does not match demand, then perforce demand must accommodate itself to output. Some methods of accomplishing this necessary accommodation are preferable to others, to be sure, but judgment on this point must refer to a standard other than the Marshallian system of pure competition.[6]

V

The change in business methods that I have described as increasing emphasis on selling as distinct from buying and producing seems, then, to call for a new type of economic theory. I have argued that Marshall's technique breaks down in the face of these facts. The critical question to which we now turn is whether the theory of monopolistic competition fills the breach.

Problems of selling are at the heart of the theory of monopolistic competition. Not only is product differentiation recognized in all its complexity, but the businessman is assumed to be intent on exploiting the profit opportunities that are opened up by differentiation. He knows or tries to discover the shape of the demand curve for his particular subproduct and sets his price accordingly. He may also deliberately vary his product and embark on advertising campaigns in an effort to improve his profit opportunities. In all these ways the picture of business life that is presented in the literature of monopolistic competition is undoubtedly closer to contemporary reality than the picture presented by Marshall.

The picture is realistic, granted; but does it simplify? Is the theory of monopolistic competition really a theory? If we run down the list of Marshall's limiting assumptions, I think it will be seen that every one of them has been abandoned and that no new assumptions have been introduced in their place.

The first of the assumptions listed above in Section III has had to be abandoned in the nature of the case. Recognition of a large number of products and subproducts, each produced by only a single firm, is the essence of the novelty introduced into economics by the theories in question.

Similarly the recognition of advertising and salesmanship destroys the second assumption, since these activities are designed to link consumption and production. One can no longer suppose that businessmen simply adjust their activities to the facts of demand.

With regard to the third limiting assumption, the case is more difficult. It seems to be explicitly retained in the standard works on monopolistic competition. Chamberlin refers to "outlays for the several economic factors, say land, labor, and capital."[7] Mrs. Robinson is more definite. "It has been customary," she writes, "to speak of four factors of production: Land, Labour, Capital, and Enterprise. This traditional demarcation of factors is convenient."[8]

[6] The question whether advertising and the other arts of salesmanship do or do not increase consumer satisfaction is not pertinent to the present argument. I would suggest parenthetically, however, that many advertising campaigns attempt first to create disutility and then offer their product as a means for removing it. There can seldom be much positive pleasure in feeling temporarily free of bad breath, body odor, and similar lurking disabilities.

[7] *Op. cit.*, p. 131.

[8] *Op. cit.*, p. 19.

Later, however, she finds that "for the problems of a single industry a finer division is necessary."[9] Nonetheless, she is clearly aware of the dangers of this procedure. "If we take too strict a view of the degree of similarity between units which will justify us in grouping them together we shall have so many separate small factors that any productive process would require an enormous number of them."[10]

In spite of these quotations, I believe that the assumption of a small number of more or less uniform factors of production is incompatible with the logic of monopolistic competition. Its use by the writers in question must be regarded merely as a device of exposition. What this amounts to is assuming, for convenience, that business firms buy their resources in purely competitive markets while selling their products under monopolistic conditions. Since both Chamberlin and Mrs. Robinson are concerned chiefly with selling rather than buying, the device does little harm. There is an inconsistency, however, because, as Triffin has pointed out, "what the buyer calls a factor is a product to the seller."[11] Product differentiation implies factor differentiation, and a comprehensive economics of monopolistic competition must recognize both.

In short, all the limiting assumptions that give form and meaning to Marshall's theory must be abandoned in order to accommodate the facts of differentiation and salesmanship. Has nothing been put in their place? In particular, does the sloping marginal revenue curve for the individual producer not imply something by way of theoretical assumptions? I shall argue that it does not: that the diagrams of Chamberlin and Robinson mask not a set of assumptions but an appeal to raw reality.

Let us look first at the demand curve, from which the marginal revenue curve is derived. Immediately we are confronted with the question, "Demand curve for *what?*" The product of the individual firm is no longer given but is open to an indefinite range of variation. Chamberlin states the point clearly: "Under pure competition a producer may, of course, shift from one field of activity to another, but his volume of sales never depends, as under monopolistic competition, upon the product or the variety of product he chooses, for he is always part of a market in which many others are producing the identical good."[12] Chamberlin imagines for each seller under monopolistic competition, therefore, not one demand curve but a group of curves, each of which represents the relationship between price and quantity for a single possible variant of the product. "For a complete picture, indeed, each element of the 'product' should be regarded as a separate variable. What, for instance, is the adjustment with regard to location when price and the *other* aspects of the 'product' are given? Quality, service, etc., might be isolated in the same way."[13] The seller is presumably able to determine the most profitable price and output for each product variation separately and then, by comparison, to choose the combination of price and product that is the most profitable of all.

This apparent solution, for all its elegance, seems to me to be no solution at all. The possible variations of any prod-

[9] *Ibid.*, p. 108, n. 1.

[10] *Ibid.*, p. 108.

[11] *Op. cit.*, p. 113 n. See also Stigler, *op. cit.*, p. 17. Stackelberg's treatment of resource markets and commodity markets is completely symmetrical.

[12] *Op. cit.*, p. 72.

[13] *Ibid.*, p. 73.

uct are limitless, and there is no way of arranging them in mathematical sequence. No one can be *aware* of all the possibilities, much less have knowledge of the appropriate demand curve for each one.[14]

The fact that product variations cannot be ordered into a sequence is of critical importance here. The range of possible *prices* for any product is also indefinitely great, of course; but in this case the possibilities do form a sequence. We are therefore able to deduce certain relationships between price and profit without explicitly studying *all* possible prices. With regard to product variation, however, we have no general knowledge about the profitability of variants that have not been tried (and may not even have been imagined). Neither the businessman nor the economist is in a position to follow Chamberlin's suggested procedure: "If constructions such as Figs. 9 and 10 [the conventional cost and revenue diagrams for a firm under monopolistic competition] are drawn for every possible variety of 'product,' that combination of 'product' and price may easily be chosen which offers the largest total profit of all."[15]

What actually happens then? Businessmen presumably choose as best they can from among the product variants that come to mind, relying on real or (more usually) imagined experiments, market "research," hunch, and judgment. If we choose to describe this process as the drawing of families of demand curves, we must recognize that these curves are entirely subjective. In particular, they cannot determine an equilibrium solution, because no set of them, however numerous, will exhaust the possibilities of product variation. And how can an economist discover anything about the relative positions of the various curves in the set? At best, only by asking the businessman—which is the opposite of a theoretical solution and is not facilitated by the construction of demand curves.

The analysis of selling cost raises formal difficulties of the same sort. On the surface, it may appear that possible variations in selling cost, unlike variations in product, do form an ordered sequence. "The magnitude of the result depends upon the amount expended," Chamberlin writes.[16] This is partly true, but it is not the whole truth. The results of selling activity are unpredictable and are not determined solely by expenditure. For any level of expenditure there exists an indefinite range of possible advertising campaigns, and these possibilities cannot be ordered in sequence. Chamberlin argues that selling and producing are analogous with respect to cost. "The most efficient combination of factors will always be sought for any given total expenditure, and the general laws governing its determination will be the same for the sales organization as for the production organization."[17] But the laws of cost relate to the output of a definite physical commodity. In what terms can the efficiency of the selling organization be stated? Cost per square mile of paper placed before the eyes of potential customers will not do. Ultimately, as Chamberlin realizes, the purpose of sales activity is to change the position of the demand curve. But there are no physical laws relating selling expenditure to demand. If all fac-

[14] Stigler must have had the same difficulty in mind when he commented as follows on one of Chamberlin's qualifying phrases: "Our new variable, 'product,' cannot be 'measured along an axis'—that is, cannot be measured" (*op. cit.*, p. 17).

[15] *Op. cit.*, p. 80.

[16] *Ibid.*, p. 130.

[17] *Ibid.*

tor prices are known, it is possible to calculate exactly how many additional pairs of shoes can be turned out for a thousand dollars of added production outlay; it is not possible to calculate how many more shoes can be sold for a thousand dollars of added sales outlay. Consequently, the selling campaign actually undertaken by any firm represents nothing more than the best guess that could be arrived at among the possibilities that happened to present themselves to the responsible managers. It cannot be taken as determining an equilibrium, since an indefinite number of untried possibilities will always exist.

In short, the conventional demand curve—which in Marshall's economics referred either to the industry under pure competition or to a single-firm monopoly—is not capable of handling the problems of product differentiation and salesmanship. The shape and position of the curve, under conditions of monopolistic competition, depend in an unspecifiable way on the nature of the product and on the type of sales campaign undertaken. They also depend—and here we have a further contrast with Marshall—on the particular relations that exist between the products of an individual firm and those of specific other firms. Under pure competition such relations would not exist. Since each industry would consist of a very large number of firms all producing an identical product, buyers would have no basis for choice among the firms; and therefore the sellers could conduct their businesses independently of one another. Under pure monopoly also, at least as conceived by Marshall, the position of the monopolist's demand curve would not depend on the policies of any other individual firm.[18] The independence of the Marshallian demand curve, in other words, rests on Marshall's assumption that total output consists of a number of distinct commodities, each homogeneous within itself and having no special competitive relations with any of the others.[19] Once this assumption has been put aside, how are we to proceed? How is it possible, when the complexities of product differentiation are admitted into the theoretical model, to construct anything resembling a Marshallian demand curve?

Chamberlin meets this difficulty by outlining a special case in which it would not exist.

> Specifically, we assume for the present that any adjustment of price or of "product" by a single producer spreads its influence over so many of his competitors that the impact felt by any one is negligible and does not lead him to any readjustment of his own situation. A price cut, for instance, which increases the sales of him who made it, draws inappreciable amounts from the markets of each of his many competitors, achieving a considerable result for the one who cut, but without making incursions upon the market of any single competitor sufficient to cause him to do anything he would not have done anyway.[20]

On the basis of assumptions appropriate to this special case, Chamberlin develops the theoretical analysis of group equilibrium that is the heart of his book. He is aware that his "large group" constitutes a special case.

> Evidently, a group may be large or small, depending upon the degree of generality given to the classification, but even if it is large, if subgroups exist, this fact cannot be disregarded.

[18] On this point see Triffin, *op. cit.*, pp. 130–31.

[19] Mrs. Robinson points out, following Pigou, that Marshall's assumption here is inconsistent with his recognition of the existence of complementary and substitutive relations among commodities (*op. cit.*, p. 20).

[20] *Op. cit.*, p. 83. The position of Chamberlin's firm under monopolistic competition is thus remarkably like that of Marshall's monopolist—except that its demand curve is presumably more elastic and that any excessive profits it may make will be taken away by the entry of new firms into the "industry."

That a group is large does not necessarily mean that the market of every seller in it overlaps the markets of *all* the others in such a way that his gains from a price cut are derived evenly from the whole field, which condition is necessary for the conclusion with regard to a large group that the price necessarily falls to its minimum point, *AR*. More characteristically, any individual seller is in *close* competition with no more than a few of the group, and he may seek to avoid price competition for the very reason given as applying to small numbers—that his cut will force those in *closest* competition with him to follow suit.[21]

Indeed, the diffusion of effects on which the analysis of the "large group" case rests is only barely conceivable if there is any real differentiation of product. How can the customers of firm A, as a group, really be indifferent as between the products of firms B, C, D, etc., unless their preference for A is so weak as to be almost negligible? If product A is sufficiently distinct from the others to establish significant attachments on the part of its buyers, it is almost certain that they would have similarly distinct preferences among the competing firms. Is it too paradoxical to suggest that the assumptions of the "large group" case are acceptable only when the degree of product differentiation is so slight that the theory of pure competition would also have yielded acceptable results?[22]

However that may be, Chamberlin himself seems to suggest that the "small group" case is the typical one under monopolistic competition. "The general conclusion must be that the considerations relevant to competition between small numbers are much more generally applicable than might at first be supposed."[23] And here the Marshallian demand curve ceases to function. Independence between the various firms in the group cannot safely be assumed. Chamberlin does not attempt a general solution for the small-group case; he merely indicates the effects of certain possible lines of behavior—that is, sellers *might* take account of their full influence, direct and indirect; they *might* assume their rivals' prices constant, etc.[24]

Chamberlin's attempt to salvage the Marshallian demand curve for use under conditions of monopolistic competition succeeds only for a most improbable special case—a special case, moreover, which verges on pure competition. (And there remain, even in the "large group," the difficulties noticed above with regard to product variation and advertising.) Mrs. Robinson, faced with the same task, simply turns away.

In an industry which is conducted in conditions of imperfect competition a certain difficulty arises from the fact that the individual demand curve for the product of each of the firms composing it will depend to some extent upon the price policy of the others. . . . In drawing up the demand curve for any one firm, however, it is possible to take this effect into account. The demand curve for the individual firm may be conceived to show the full effect upon the sales of that firm which results from any change in the price which it charges, whether it causes a change in the prices charged by the others or not. It is not to our purpose to consider this question in detail. Once the demand curve for the firm has been drawn, the technique of analysis can be brought into play, whatever the assumptions on which the demand curve was drawn up.[25]

[21] *Ibid.*, p. 103.

[22] Stigler hints that this may be so, although he leaves the question open pending "empirical tests" (*op. cit.*, p. 24).

[23] *Op. cit.*, p. 104.

[24] What does it mean to take account of their "full influence, direct and indirect"? Triffin points out (*op. cit.*, pp. 34–36) that Chamberlin interprets this in effect as a belief on the part of the firm that its rivals will imitate any price changes it may make, whether up or down.

[25] *Op. cit.*, p. 21. One of Keynes's comments on Tinbergen comes to mind, perhaps irrelevantly. "If only he is allowed to carry on, he is quite ready and happy at the end of it to go a long way towards admitting, with an engaging modesty, that the re-

Unfortunately, however, the exact shape of the demand curve is just what we need to know in order to make use of Mrs. Robinson's analysis, with its "adjusted concavities" and the like.

This leads us to a final and most considerable limitation of the theory of monopolistic competition. The businessman himself—not just the economist—is required to know the shape of the demand curve for his product. In Chamberlin's work as well as in Mrs. Robinson's, the businessman is given the task of setting marginal revenue equal to marginal cost. In order to determine the marginal revenue, he must know the elasticity of demand for his product.[26] This is in sharp contrast to the theory of pure competition, in which the businessman adjusts his output to changes in the *price* of his product. Even under pure competition, to be sure, it may be no easy matter for the businessman to determine his marginal cost; but at least the elements that enter into it are known to him. The determination of marginal revenue under monopolistic competition may be quite impossible, since it depends not only on the preferences of customers (which may be changed in unpredictable ways by advertising or product variation) but also on the actions of rival sellers (including, of course, *their* advertising campaigns and product variations).

This point requires emphasis. The demand curve for any product is difficult enough to determine at best. In the case of pure competition, however, this is purely a problem of economic research. The *existence* of equilibrium is not dependent on whether or not the location of the curve can be discovered. Under monopolistic competition, on the other hand, the outcome of the theoretical analysis is determinate only if the businessman himself knows the shape and location of his demand curve. Knowledge from outside, on the part of an economist, even if it were possible, would not be sufficient. The businessman himself must have, and act on, a firm conception of the demand curve.

We cannot escape from this difficulty merely by asserting that businessmen do set prices somehow and must therefore have *some* sort of demand conception in mind. That line of reasoning leads to the defeat of all economic theory, since it could serve to explain any price and output policy that happened to be decided on. If the marginal revenue curve is interpreted as a kind of symbolic representation of whatever vague notions the businessman may have about sales in relation to price, it is useless and misleading. Specifically, it cannot properly be taken as determining an equilibrium, since notions that are too vague to be stated explicitly can hardly be assumed to be stable and can certainly not be subjected to mathematical analysis.[27]

sults probably have no value. The worst of him is that he is much more interested in getting on with the job than in deciding whether the job is worth getting on with" (*Economic Journal*, December, 1939, p. 559).

[26] Robinson, *op. cit.*, pp. 34–36.

[27] Stigler's final evaluation of the theory of monopolistic competition is very similar to mine, although he assigns rather different reasons for its failure. "It will be observed that the theory of monopolistic competition now contains no conditions of equilibrium, only a definition of equilibrium. As a result, in the general case we cannot make a single statement about economic events in the world we sought to analyze" (*op. cit.*, pp. 18–19).

Stackelberg, too, comes to the conclusion—by a route very different from my own—that conventional economics cannot deal fruitfully with the problems of imperfect competition (*op. cit.*, esp. pp. 101–2). But I strongly disagree with him on two important points: (1) To my mind, the failure of theoretical analysis to demonstrate that any particular equilibrium must exist in an imperfectly competitive market does not in the least mean that such

VI

If the theory of monopolistic competition has failed to provide an *explanation* of prices and output, it has never even tried to fulfil the other main function of Marshall's theoretical scheme—that is, to provide a standard of reference by which the existing pattern of prices and resource use could be judged. The equilibrium condition under monopolistic competition, with marginal revenue equal to marginal cost, has no standing whatsoever as an ideal. Here at any rate Lionel Robbins' dictum is applicable: "Equilibrium is just equilibrium."[28]

Chamberlin and Robinson both hold that under monopolistic competition prices will be higher and output for each firm smaller than under pure competition. Yet even this proposition, which presents the equilibrium of monopolistic competition as a sort of inverted ideal, is difficult to maintain as applied to the economy as a whole. Imagine a great day of transformation when the idea of product differentiation dawns on a world that had previously known nothing but pure Marshallian competition. All average revenue curves are instantly tilted from the horizontal. Marginal revenue falls below price, and every firm takes steps to exploit this breach in the consumers' defenses by raising its price and reducing its output. Abnormal profits become universal. (The capitalist's utopia!) What happens? Are new firms spawned in every industry, thus causing general overcapacity? That is hard to imagine, since there were presumably no idle entrepreneurs or resources at the outset. It would be convenient to hope that a wise government might embark on inflationary schemes designed to push all demand curves to the right, so that marginal revenue might intersect marginal cost at a point corresponding to the competitive output—and incidentally to full employment once more, with the same number of firms as before. Still, that would not really be a solution either, since costs would now be expected to rise and therefore output would fall again. Nothing will be gained by pursuing this giddy process further. If we follow its logic rigorously, we may conclude that the introduction of product differentiation must lead to perpetual disequilibrium. But it is more reasonable to remember Mrs. Robinson's comment that "the method which applies to one industry separately cannot be applied to all taken together."[29] The theory of monopolistic competition, at any rate, does not prove to us that the existing pattern of resource use diverges from the competitive ideal in any particular direction. Then what is our reason for believing that actuality diverges from the ideal at all? Mainly peasant skepticism: Who expects anything ever to conform to an ideal? This is healthy, but it provides no firm basis for public policy.

VII

Our discussion up to this point has run entirely in terms of Marshallian partial equilibrium economics. But this is not the only type of theorizing that is compatible with what I have called the general philosophical framework of economics. Would it have been possible to deal with the problems of product dif-

a market must in fact behave in an erratic and dangerous fashion. A failure of analysis does not imply a failure of the institutions being analyzed. (2) The fact that these problems cannot be fruitfully analyzed within the framework of conventional economics does not imply that they cannot be fruitfully analyzed within some other theoretical framework, starting from some other point of view.

[28] *An Essay on the Nature and Significance of Economic Science* (London, 1932), p. 127.

[29] *Op. cit.*, p. 310.

ferentiation more fruitfully along the lines of Walras' general equilibrium system, for example?

Dr. Triffin has shown that certain inconsistencies in the presentation of monopolistic competition doctrine, especially with regard to the notion of a group or industry, can be cleared up by way of a general equilibrium approach.[30] But Triffin's conclusion is, to my mind, essentially a rejection of theory rather than a clarification:

> Disencumbered, however, of all the limitations and taboos implied in the classical assumptions, the way is now open for the building up of a different type of economics. Instead of drawing its substance from arbitrary assumptions, chosen for their simplicity and unduly extended to the whole field of economic activity, our theory may turn to more pedestrian, but more fruitful methods. It will recognize the richness and variety of all concrete cases, and tackle each problem with due respect for its individual aspects. More advantage will be taken of all relevant factual information, and less reliance will be placed on a mere resort to the passkey of general theoretical assumptions.[31]

Were Marshall's assumptions "arbitrary"? I think not. Were they "chosen for their simplicity"? Certainly, since it is the task of thinking to simplify.

A casual glance at any of the masterpieces of British economics, from Adam Smith to Keynes, gives an impression of practicality, concreteness, and realism. The writings of Cournot, Walras, and Pareto seem abtract and theoretical by contrast. Yet, on closer consideration, it appears that the theorizing of the British writers is far bolder than that of the Continental group. Recognition of n commodities and n firms, however abstract it may sound, excludes none of the complications of reality. The economist or statistician who attempts to *use* a general equilibrium system is forced to introduce his own simplifications and groupings *ad hoc*. Only when this has been done will we be able to judge whether the results obtainable along the lines suggested by Triffin are more useful than those of Chamberlin and Robinson. As the matter stands at present, the general equilibrium approach to monopolistic competition is in the same position as the particular equilibrium approach: It is not a theory but the abandonment of theory.

In short, we are led back to our earlier conclusion. The failure of monopolistic competition analysis is not due to any technical inadequacies on the part of its originators. The trouble lies deeper. The problems presented by advertising and product differentiation are simply not problems of scarcity. They are therefore not manageable within the philosophical framework of economics. We turn now to a brief consideration of the nature of those problems.

VIII

Product differentiation must have existed from the earliest stages of economic life. Advertising, too, although less ancient, is not a modern invention. The mere existence of product differentiation or even of advertising, however, did not destroy the usefulness of Marshall's theoretical structure. But the deliberate exploitation of differentiation is another matter.[32] In the same way (although the distinction is less sharp) advertising de-

[30] *Op. cit.*, esp. pp. 78 ff.

[31] *Ibid.*, p. 189. Stigler, after quoting essentially the same passage from Triffin, draws the following conclusion: "Chamberlin's picture of reality has finally led, when consistently followed, to the familiar reaction: *ad hoc* empiricism" (*op. cit.*, p. 22).

[32] John Stuart Mill was aware of the importance of differentiation in retailing but suggested that it was likely to decrease rather than increase in the future (see *Principles of Political Economy*, Book 2, chap. 4, sec. 3 [5th ed.; New York, 1879], I, 310 ff.).

signed to cajole is different from advertising designed primarily to inform.

The scarcity conception, which is at the heart of traditional economics, implies a relationship between definite ends and definite means. The nature of salesmanship, in the broadest sense, however, is such that both ends and means, as well as the relation of one to the other, lose definiteness. The businessman in pursuit of profit is no longer guided by an ascertainable demand for a specific product. Rather he must attempt to bring about an adjustment between the amorphous hankerings of consumers and the complex bundle of services that his firm may decide to produce. Everything is variable: the product, the cost of production, the kind of advertising, the attitude of buyers, the behavior of rivals, and the price. Some rational analysis of business behavior under such circumstances may be possible, but the scarcity conception is not a useful point of departure.

Moving from the individual firm to the economy as a whole, our conclusion is the same. The scarcity conception has provided a basis for judging the effectiveness of economic organization. If the desires of consumers have a definite existence, production and exchange may be considered as an effort to satisfy those desires. Scarce resources, then, should be used in such a way that a larger satisfaction is never sacrificed to a smaller. This standard presents certain difficulties, to be sure, but with a few added assumptions it can be made reasonably clear.

If, however, the desires of consumers do not have a definite existence—if they are vague, unstable, and subject to manipulation—then the standard collapses. When economic resources are used to influence consumers' tastes, how are we to judge whether they are wisely used? The adaptation of means to ends is a scarcity problem: the objective is to attain the maximum satisfaction possible with the given resources. But if some of the means are used to change the ends, economic evaluation of the outcome has no significance. Once again, it may be possible to arrive at a rational judgment on some other basis. Certain patterns of consumption may well be preferable to others in terms of emotional health or the good life, but such ideas have no place within the philosophical framework of economics.

Throughout this paper I have maintained that the selling side of business activity has become increasingly important since the period in which Marshall's economics was formed. Indeed, I have taken this shift in focus to account for most of the theoretical problems that gave rise to the doctrines of monopolistic competition. But has such a shift actually taken place? When did it manifest itself, and how is it to be explained?

These questions are by no means simple, and only a historian could attempt an adequate answer. Perhaps one might relate the phenomenon to the growth of literacy and the rise of the mass newspaper in the last quarter of the nineteenth century.[33] This created the

[33] "The advertiser was the first to profit from the effects of compulsory literacy. His progress was continuous" (Esme Wingfield-Stratford, *The Victorian Sunset* [New York, 1932], p. 206). These effects, according to Wingfield-Stratford, began to make themselves felt decisively during the 1880's. The entire chapter from which I have quoted, entitled "Mass Suggestion," is pertinent here. A similar impression of the second half of the nineteenth century is recorded by G. M. Young in *Victorian England: Portrait of an Age* (London, 1936): "After the age of the great producers: Armstrong, Whitworth, Brassey, comes the age of great shops and great advertisers" (p. 159). Indications along the same line may be found in G. M. Trevelyan, *British History in the Nineteenth Century and*

technical means for influencing tastes on a large scale. In addition, the rapid growth of population, and especially of urban population in Europe and America during the past century, together with the rising standard of living, tended to loosen the hold of physical necessity and of custom—breaking down traditional modes of consumption and opening the way for salesmanship.[34] These tendencies have continued into the present, and the techniques of salesmanship have recently been developing at an accelerated rate, it would seem.

Problems of scarcity have not by any means disappeared from the world. Even in the relatively wealthy countries, the wants of a large fraction of the population are still quite definite, and a considerable part of total output still satisfies clear-cut needs. By the same token, the economics of Alfred Marshall and the classical tradition are still useful. But as deliberate product differentiation, advertising, and salesmanship take the center of the stage, economic theory in the traditional sense must depart. A revolution in analysis is called for—a new set of questions, a new philosophical foundation.

After (London, 1937), esp. pp. 354 ff. and 388 ff., and in his *English Social History* (London, 1946), pp. 576 ff. Going further afield, William L. Langer's account of British public opinion in the 1880's and 1890's (*The Diplomacy of Imperialism* [New York, 1935], I, 80 ff.) serves to suggest that we are dealing with a change that extends well beyond the realm of prices and production. These random citations are not intended to prove anything, of course, but merely to indicate the sort of interpretation on which my statement in the text was based. For this purpose, one final work should be mentioned: José Ortega y Gasset, *The Revolt of the Masses* (New York, 1932).

[34] Helen Merrill Lynd (*England in the Eighteen-Eighties* [New York, 1945], p. 8) quotes the following from T. H. S. Escott's *England*, published in 1885: "The last new mode finds its way to the neighborhood market town very nearly at the same time that it does to the capital of the empire; and cheap bonnets of the latest shape, or ribbons of the approved tint, are displayed in the window of the village shop a very little while after they have first been exposed to the view of the buyers of Regent Street." See also Trevelyan's description of "free trade prosperity" (*English Social History*, p. 559).

WAGE DETERMINATION AND INVOLUNTARY UNEMPLOYMENT[1]

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I

THE orthodox theory of wage determination in nonunionized labor markets was formulated for full-employment situations. Certain of its implications give rise to difficulties in the presence of involuntary unemployment, and it is the purpose of this article to explore these difficulties.

According to the orthodox theory of competitive labor markets, competition for labor among employers keeps the wage of a given type of labor equal to its marginal value product.[2] Under certain conditions, however, competition may be insufficient or even entirely lacking, thus making possible the payment of wages below the marginal value product (the monopsonistic exploitation of labor). Such conditions are usually described as geographical or collusive monopsony.

Geographical monopsony may exist in an isolated labor market in which there is only one employer or one principal employer, provided that the mobility of labor between geographically separated markets is low. It may also exist where there is only one important employer of a given specialized type of labor, and the mobility of labor is low both geographically and between occupations.

Collusive monopsony exists where the employers in a local or occupational labor market, by explicit or tacit agreement, act in concert to keep wages below competitive levels.[3]

There is a third type of condition under which competition for labor by employers is not an effective force. It is ineffective in the presence of involuntary unemployment, which exists when the number of workers seeking work at or below prevailing wages is persistently larger than the number of vacancies.[4] However, the implications of this condition for the theory of wage determination are very different from those of the other two cases. This difference will be explored in later sections.

The terms "geographical" and "collusive" monopsony both describe market structures, whereas involuntary unemployment is generally a characteristic of a phase of the business cycle, although it may also be chronic in certain areas. However, the two forms of monopsony are not independent of the business cycle. On the contrary, they are strongly influenced by it. The relation between the business cycle and geographical monopsony will be examined first.

Geographical monopsony depends on the geographical immobility of labor. In periods of general unemployment, workers will tend to stay within a given local

[1] I am indebted for helpful criticism to Professors D. Gale Johnson and Lloyd A. Metzler, who have read an earlier draft of this article.

[2] This term will be used here to indicate marginal physical product times marginal revenue. The term "marginal revenue product" is used instead by some writers.

[3] Since this discussion concerns only nonunionized labor markets, the concerted action referred to here does not include formal or informal concerted action by employers for collective bargaining.

[4] The question of whether this definition should be in terms of real or money wages is discussed below, pp. 146–47.

labor market for at least three types of reasons: (1) the lack of job opportunities elsewhere; (2) the ordinary frictions of the market, especially the cost of movement and lack of information; (3) the attachment of workers to their home communities, their families, and their friends. This last factor can be regarded as a nonmonetary cost of movement, or alternatively as a nonmonetary income attached to staying in the same place. Workers may be able to afford the monetary costs of movement and know of higher-paying jobs elsewhere and yet prefer not to move. But inasmuch as this preference is not created by costs incurred by their employer, the cost of labor to him may be less than its marginal value product. A monopsony based entirely on this type of immobility would be a form of "voluntary exploitation." It might be argued that if this were the only form of monopsony, the labor market would be functioning well enough to render unnecessary any interference with its natural working.

During periods of full employment the first of the causes of immobility listed above disappears, and the amount of geographical movement of labor increases sharply. The degree of effective geographical monopsony must be correspondingly diminished. It could be diminished still further by measures designed to reduce frictions, the simplest of which is providing workers with better information about employment conditions and prospects. Geographical monopsony, which may be a very important problem under general unemployment, is probably not of serious proportions under full employment.

Similarly, collusive monopsony cannot be of equal importance in all phases o the business cycle. Concerted action to keep wages down is not needed in periods of severely declining employment, when the lack of competition for labor gives individual employers great power, if they wish to exert it, to reduce wages to low levels. Concerted wage reductions occur during depressions, but it seems probable that the effect of concerted action at such times is to make wage reductions slower or smaller than they would otherwise have been. Its chief purpose is often to enable individual employers to escape some of the unpopularity attached to cutting wages. In return for this, some employers may be required to limit their action to conform with that of employers who are less anxious for wage reductions.

But concerted action on wage changes also becomes unworkable when labor is in short supply. The reason is, of course, that as labor becomes scarce each member of the combination has an increasing incentive to break away and outbid the others. This is analogous to the incentive to cut prices for members of a product-market cartel, which explains why successful cartels must hold some type of power over their members. But coercive power is easier to obtain for a product-market cartel than for a collusive labor monopsony. The members of the product-market cartel sell in the same market and may buy on several common factor markets. The cartel can punish the violator of its agreements by underselling to his customers, while at the same time maintaining cartel prices to buyers he is unable to serve. The possibility of such successful extralegal[5] policing of an agreement to hold down wages in a tight labor market seems slender. The experience of the War Labor Board shows that even legal maximum wages are hard to enforce during an inflation.

If this reasoning is correct, the chief

[5] The policing would be extralegal for a collusive labor monopsony, but illegal for a product-market cartel, since the latter, but not the former, violates the antitrust laws.

importance of collusive monopsony is during periods of recovery and periods in which there is neither an excess supply of labor at current wages nor an excess demand.

As we have seen, the importance of deficiencies in competition on labor markets due to market structure depends on the phase of the business cycle. But the deficiency of competition resulting from involuntary unemployment does not depend on market structure. Monopsony which exists during full employment is intensified in depressions, but even in highly competitive labor markets involuntary unemployment gives individual employers substantial power over wage rates.

The formal theory of monopsony will now be reviewed; this will permit a later examination of the way in which it is affected by business cycle considerations.

II

The generally accepted theory of monopsony is that presented by Mrs. Robinson and shown in Figure 1.[6] This theory is equally applicable to geographical and collusive monopsony. The demand for labor is given by *DD*, and the supply curve, or average cost of labor, by *SS*. The line *MC* is the marginal cost of labor derived from the supply curve. The firm or combination sets employment at *ON* by equating marginal cost and demand (marginal value product). The resulting wage, *NP*, is determined by the intersection of *NH* with the supply curve. This model has the now familiar characteristic that the imposition of a minimum wage between *NP* and *NH* will cause an increase in employment over *ON*. The maximum employment, *OQ*, would result from a minimum wage exactly equal to *QR*, which gives the level of the intersection of *DD* with *SS*.

The foregoing analysis has usually been accepted by both proponents[7] and opponents[8] of minimum-wage legislation. It has been widely used in textbooks and classrooms as the only theory of monopsonistic wage determination.[9] Although no writer appears to have used it explicitly to cover lack of competition resulting from unemployment, it is often

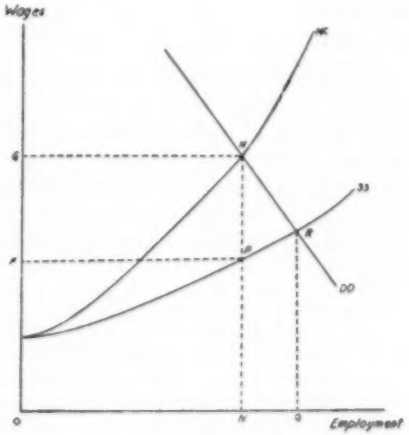

FIG. 1

considered by students to cover any lack of competition in labor markets. This leads to an argument, sometimes encoun-

[6] Joan Robinson, *The Economics of Imperfect Competition* (London: Macmillan & Co., Ltd., 1933), p. 294.

[7] See, e.g., Paul H. Douglas, "Wage Theory and Wage Policy," *International Labor Review*, XXXIX (February, 1939), 346.

[8] See, e.g., George Stigler, "Economics of Minimum Wage Legislation," *American Economic Review*, XXXVI (June, 1946), 358–65.

[9] It was not so intended by Mrs. Robinson. She presents a second case, in which the existence of monopsony profit attracts additional firms until the profit disappears, although the upward-sloping supply curve of labor still confronts each firm. This case, which is analogous to monopolistic competition in product markets, seems to have been forgotten in most later discussion. The imposition of effective minimum wage legislation in this case always diminishes employment by reducing the number of firms (Robinson, *op. cit.*, p. 296).

tered, which holds that a minimum-wage law would increase total employment in an economy, even abstracting from effects on aggregate demand, because labor markets are, by and large, not very competitive. However, if the analysis of Section I is correct, the contention that labor markets are essentially not competitive would be well founded only in periods of general unemployment. Thus, it must next be asked whether accepted monopsony theory is applicable during such periods.

III

The answer to the question just raised depends on what force is believed to limit the fall of wages in nonunionized markets during a depression. In pre-Keynesian literature the limiting factor was generally held to be the unorganized resistance of workers. Thus the Webbs state:

> In the years of worst trade, when thousands of engineers or boilermakers, masons or plumbers, are walking the streets in search of work, the most grasping employer knows that it is useless for him to offer them work in their respective trades at ten or fifteen shillings a week. . . . This stubborn refusal to render their particular class of service for a wage that strikes them as outrageously below their customary standard does not depend on their belonging to a Trade Union, for it is characteristic of unionists and non-unionists alike, and is found in trades in which no combination exists.[10]

This resistance is thought to be based on the level of real rather than money wages, for the Webbs continue: "If every artisan, without the slightest concert with his fellows, is possessed by an unreasoning prejudice that he and his family must consume wheaten bread, butcher's meat, beer and tea, instead of living on oatmeal, maize, potatoes and water; the employer will find it useless to suggest that 'any meal is better than none.' "[11]

If this interpretation of the limiting force in a wage decline is correct, then the orthodox theories of both competitive and monopsonistic labor markets would still hold, the choice between them depending, as in full employment, on market structure alone. Only the decrease in the number of employers might somewhat increase the applicability of the monopsony case. The market would always be cleared, for a shift in the market demand schedule for labor to the left would involve a movement along the supply schedule to a lower wage. At this low wage only those workers willing to accept the reduced standard of living would be part of the supply of labor; the others by refusing to accept this standard would have temporarily left the labor market.[12] Employers in competitive markets would be confronted as before with horizontal supply curves, but at a lower level. Monopsonists would operate on the lower portions of their previous supply curves.

The unemployment existing under this concept is clearly not involuntary in the Keynesian sense. Keynes states that by involuntary unemployment he does *not* mean "the withdrawal of labor by a group of workers because they do not choose to work for less than a certain real reward."[13] However, the Keynesian concept of involuntary unemployment, while it assumes willingness to work below ex-

[10] Sidney and Beatrice Webb *Industrial Democracy* (London: Longmans, Green & Co., 1919), p. 694; see also P. H. Douglas, *The Theory of Wages* (New York: Macmillan Co., 1934), pp. 84–85.

[11] *Op. cit.*, p. 697.

[12] The Webbs are not consistent in this interpretation. Elsewhere they write as if an excess supply of labor existed at current wages, at least during the early phases of a decline (*ibid.*, p. 660).

[13] J. M. Keynes, *The General Theory of Employment Interest and Money* (New York: Harcourt, Brace & Co., 1935), p. 15.

isting real wages, is so defined that it does not necessarily imply willingness to work below existing money wages. This is true because the lower real wages are specified as being produced by a rise in consumer prices, with money wages remaining constant. If the position is taken (and it is probably the one Keynes intended) that involuntarily unemployed workers are not willing to work below existing money wages, we have involuntary unemployment depending on an absolute money illusion. Unemployment is involuntary with respect to real wages but voluntary with respect to money wages.[14] This seems realistic, if at all, only for a highly unionized economy (including, of course, the British economy of Keynes's time). For unorganized workers, it seems reasonable to define involuntary unemployment in terms of money wages. This definition is not intended to deny the existence or importance of the money illusion. It still permits the idea of a relative money illusion; that is, a given fall in real wages by way of money wages (consumer prices remaining constant) might produce a larger decrease in the quantity of labor offered than the same fall in real wages by way of rising consumer prices (money wages remaining constant). Such a relative money illusion could be very great; it might involve workers believing or behaving as if real wages were falling at times when they were actually rising. Our definition means only that for unorganized workers a willingness under the duress of unemployment to accept work at less than current real wages will usually include some willingness, however much smaller, to work at less than current money wages.[15]

[14] *Ibid.*; see also James Tobin, "Money Wage Rates and Employment," in *The New Economics*, ed. S. E. Harris (New York: Alfred A. Knopf, 1947), pp. 572–87.

The use of a definition of involuntary unemployment in terms of money wages has the advantage for our purposes of permitting its introduction into the theory of the firm. This is difficult in the case of the strict Keynesian definition because the firm does not set real wages.

The only theory of the limiting force to wage declines in a depression consistent with the money-wage concept of involuntary unemployment is one in which this force lies on the employer side of the market. The existence of an excess supply of labor at current wages implies that all employers have a certain power to lower wages which is akin to the power of a monopsonist. But it also implies that this power is not fully exerted. If wages were forced down to the lowest amount workers would accept, the excess supply would disappear, and all unemployment would again be voluntary. For involuntary unemployment to exist, a limit must therefore be present on the employer side lying above the limit imposed by unorganized workers.

It is thus the clear implication of the money-wage concept of involuntary unemployment that the wages paid by most employers do not lie on the supply curve of labor; that is, that employers by and large do not maximize profits in the short run. Clearly, neither orthodox competitive theory nor Mrs. Robinson's monopsony theory fulfils this condition. Furthermore, if the argument of Section I is correct, the usual monopsony theory, with its assumption of no involuntary unemployment,[16] applies only to phases

[15] Keynes argues that workers, even if inclined to reduce their real wages in this way, would be thwarted, since the price level would fall proportionately with the wage level, keeping real wages constant. This argument is very important for macro-economic problems but is not relevant to the discussion here.

[16] That this is an assumption of Figure 1 may be readily seen. The theory depends on the need of the

of the business cycle in which the problem of monopsony is least likely to be a serious one.

The next task is the formulation of a theory of wage determination under conditions of involuntary unemployment.

IV

The formulation of a theory of wage determination under conditions of involuntary unemployment has been attempted by Professor Lloyd Reynolds.[17]

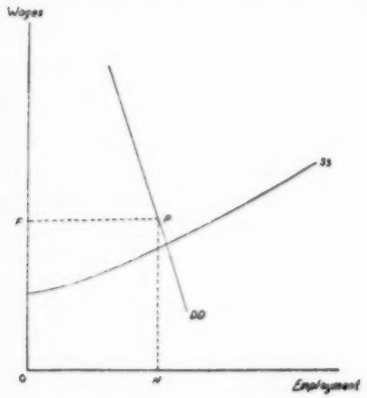

FIG. 2

Reynolds deserves great credit for seeing the need for such a theory and making a good start toward one. But his result is not entirely satisfactory. It involves several special assumptions about both employer and worker behavior which are probable under certain conditions but not necessary. This robs the theory of generality. It is really a special case of the theory of wage determination under involuntary unemployment, although it may be an important one.[18]

A simpler and more general theory is suggested by Figure 2. This shows the supply curve *SS* and the demand curve *DD* (marginal value product), with the wage *NP* determining employment where it meets the demand curve. Since the wage does not lie on the supply curve, but is determined by other considerations, the curve marginal to the supply curve is no longer relevant and is not shown. The horizontal distance from *P* to the supply curve is the measure of involuntary unemployment, or the quantity of unemployed labor available to the firm at its current wage. Special factors of the type considered by Reynolds may be introduced to provide variations of this model by altering the shapes of the curves.

The situation shown in Figure 2 is the analogy on the labor market of the situation which existed on many product markets during the recent postwar inflation. Steel, automobiles, and other products were priced by their producers at levels below those which would have cleared the market. Selling prices which did not lie on the demand curves resulted in an unsatisfied demand.

Figure 2 should be interpreted as a

employer to pay higher wages to get more labor; that is, on the upward-sloping supply curve. If involuntary unemployment existed, he would be able to obtain more labor at the same wage. Some economists may advocate abandonment of the concept of involuntary unemployment to save the idea of short-run profit maximization. That would seem to me to be the abandonment of observed reality for the sake of a dubious and untested theory.

[17] Lloyd G. Reynolds, "Some Aspects of Labor Market Structure," in *Insights into Labor Issues*, ed. Richard A. Lester and Joseph Shister (New York: Macmillan Co., 1948), pp. 278–85.

[18] Reynolds' case gives the same measure of involuntary unemployment as is given here. It differs largely in assuming that it is possible to hire new employees below the lowest rate which would be accepted by present employees. It assumes that at some wage below the current one, but above the supply price of some unemployed workers, present employees would engage in "a complete and permanent work stoppage" (*ibid*, p. 279). The realism of this assumption depends on the traditions of workers in the market in question. Reynolds also uses a different concept of the supply curve than is used here.

theory of the determination of employment levels in the firm, given the wage. But how was the wage NP arrived at? In some cases, it would represent a wage which lay on some past supply curve, determined by the point at which this supply curve intersected a former level of employment. This former level of employment was in turn determined by the intersection of the marginal cost curve derived from the old supply curve, and an old demand curve lying above and to the right of the present one. In other cases, the wage NP might represent a revision downward from an initial level determined in the manner just described, where such revision lagged behind the downward movement of the supply curve.

This explanation is intended to distinguish this theory from theories of nonunion wage determination in which the employer is free to vary wages within limits, and the principles of determination within these limits are not related to past supply curves. Such a theory is given by Reynolds in a recent text.[19]

[19] L. G. Reynolds, *Labor Economics and Labor Relations* (New York: Prentice-Hall, Inc., 1949), pp. 352–58. Several objections can be made to Reynolds' theory: (1) The principles for the determination of the wage within the limits are too vague. (2) The entire explanation is given with reference to one particular level of employment. This seems to imply that the demand for labor is completely inelastic with respect to wages, which is surely not correct. It gives no clue to the supply price of labor at other levels of employment. (3) The upper limit is given as the highest wage at which the employer could stay in business in the long run. Except in perfectly competitive markets, a limit so defined would lie above the marginal value product. Although the employer may not know the marginal value product with much accuracy, it seems in the long run to be the correct upper limit.

I agree with Reynolds that orthodox theory is in many respects inadequate. But Reynolds seems here to have discarded more of orthodox theory than is necessary to meet his objectives. His more recent theory seems inferior to that of his previously mentioned article, "Some Aspects of Labor Market Structure."

One of the implications of Figure 2 is that, abstracting from effects on aggregate demand, the imposition of a minimum wage above the present wage would reduce employment. This is true even though the competition for labor by employers is not an effective force. If this is correct, and if it is also correct, as argued in Section I, that monopsony is not of great importance in periods of full employment, then it follows that minimum-wage laws, apart from effects on aggregate demand, are never likely to increase employment in the economy as a whole.

The crucial question raised by this theory, or any theory in which employers set wages which lie above the supply curve, concerns the explanation of employer behavior. Why should an employer choose to pay his workers more than he has to? It should be noted that the question is not, "Why do employers reduce employment *rather than* cutting wages?" If employers do reduce employment, they are all the more likely to find that their wages lie above the supply curve, and the question then is, "Why don't they cut wages *as well as* reducing employment?" Direct research into this problem is very badly needed. Meanwhile, several hypotheses may be advanced. These are not contradictory, and some combination of several or all may be at work in particular cases.

The most important explanation may be fear of public disapproval if wages are cut too soon or too much. Government pressure to maintain wages during depressions works in the same direction. Some employers may fear that a reputation for wage-cutting will damage their ability to recruit desirable labor in subsequent periods of full employment; this would be true if a depression were expected to be short. The importance of

this factor is limited by the generally prevailing pessimism of businessmen during depressions. In a few cases, fear of unionization may play a part. A final factor may be important in the case of larger corporations. The management may refrain from cutting wages in part because of fear that the stockholders or directors would then require a similar cut in managerial salaries.[20]

V

It would be very difficult to prove the validity of the preceding arguments with empirical evidence. But there are types of evidence which, while they do not afford proof, do furnish considerable support. In particular, evidence that wages in nonunionized labor markets do not fall sharply or quickly in the face of large decreases in employment would support the idea that wages may lie above the supply curve. Also, evidence that real wages rise or remain stable in the presence of large-scale unemployment would seem to run counter to the idea that it is the protest of workers against real wage decreases which sets the limit to the fall of wages in depressions.[21]

Evidence which is in large part of this type is presented in Table 1, which shows the movement of wages and employment in twenty-one manufacturing industries in the United States during two depressions which antedate large-scale unionism in manufacturing.

The first period shown is that from July, 1920, to July, 1921, or from the height of the postwar boom to the deepest month of the following depression, as measured by the total man-hours series for the twenty-one industries. Average hourly earnings continued to decline somewhat for another six months or more;[22] in December, 1921, average hourly earnings in the twenty-one industries were 2.6 cents below the July, 1921, level of 51.2 cents.

The method of presentation of Table 1 is not entirely adequate for this period, since nondurable goods industries in general started to decline sooner and to recover sooner than manufacturing as a whole. Thus for two industries, silk and wool, total man-hours were higher in July, 1921, than a year earlier. For the group as a whole, man-hours declined 43 per cent in a year; average hourly earnings declined 15 per cent; and real hourly earnings rose 3 per cent.[23] Of the nineteen industries in which man-hours decreased, only five experienced a decrease in real hourly earnings; one of these decreases was of only 1 per cent.

The second period considered is the period from 1929 (annual average) to September, 1931. This month is approximately two years after the beginning of the depression and just before the first wage cuts in heavy industries. The stability of money wages in this period is very great. For the twenty-one industries, average hourly earnings fell only 5 per cent and real hourly earnings rose 11 per cent, although total man-hours

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[20] This possibility was suggested to me by D. Gale Johnson.

[21] It is important to note that, to the extent that there is a money illusion, real wage stability or increases are consistent with worker protests against falling money wages. In other words, despite rising real wages, some of the decline in employment may represent voluntary withdrawal from the labor market because money wages fell. It seems unlikely, however, that very much of the decline in employment during depressions is of this type. (See pp. 146–47 above.)

[22] Data are not available for the first six months of 1922.

[23] The rise in real hourly earnings does not mean that manufacturing wage-earners as a group benefited from the depression. They lost heavily, of course, through unemployment and underemployment.

fell 44 per cent. Money earnings fell by more than 5 per cent in only six of the twenty-one industries. It is especially noteworthy that they did not fall more than 5 per cent in any of five heavy industries (agricultural implements, automobiles, electrical manufacturing, foundries and machine shops, and iron and steel), although in all these industries man-hours decreased by more than 50 per cent. Real hourly earnings fell in only one of the twenty-one industries in this period, and in that one by only 1 per cent.

The last period considered is the period from 1929 (annual average) to March, 1933. This month was the low point of the depression in terms of the total man-hours series for the twenty-one industries. Average hourly earnings continued to decline for three more months; their June, 1933, level was 0.9 cents below the March figure of 45.9 cents.

During this period, average hourly earnings for the twenty-one industries fell 22 per cent, real hourly earnings rose 8 per cent, and man-hours fell 63 per cent. Real hourly earnings fell in only three of the twenty-one industries and in only one by more than 2 per cent.

It might be suspected that the cause of the relative stability of wage rates

TABLE 1

THE MOVEMENT OF MONEY AND REAL WAGES AND TOTAL MAN-HOURS IN TWENTY-ONE MANUFACTURING INDUSTRIES, 1920–21 AND 1929–33*

Industry	July, 1921, as a Percentage of July, 1920			September, 1931, as a Percentage of the 1929 Average			March, 1933, as a Percentage of the 1929 Average		
	Average Hourly Earnings	Real Hourly Earnings	Total Man-Hours	Average Hourly Earnings	Real Hourly Earnings	Total Man-Hours	Average Hourly Earnings	Real Hourly Earnings	Total Man-Hours
21 manufacturing industries†	85	103	57	95	111	56	78	108	37
Agricultural implements	76	92	18	98	114	19	84	117	18
Automobiles	85	103	34	98	114	40	80	112	26
Boots and shoes	89	107	98	87	101	98	75	104	81
Chemicals	82	99	62	92	107	76	81	113	59
Cotton, North	78	94	76	94	109	65	72	100	52
Electrical manufacturing	90	109	52	100	116	47	91	126	24
Foundries and machine shops	88	106	41	95	110	40	80	111	24
Furniture	95	115	60	94	109	57	70	98	32
Hosiery and knit goods	85	103	86	85	99	74	65	91	60
Iron and steel	65	79	31	97	113	45	73	102	26
Leather tanning and finishing	78	94	85	95	111	84	77	107	68
Lumber and millwork	89	107	73	90	105	52	71	100	23
Meat-packing	82	100	76	100	116	80	77	108	67
Paint and varnish	88	107	60	102	118	64	78	109	50
Paper and pulp	84	101	46	97	112	69	78	108	58
Paper products	97	118	63	98	114	78	84	117	60
Printing, book and job	103	125	72	104	121	70	94	132	50
Printing, news and magazine	104	126	99	97	113	82	80	112	73
Rubber	84	102	64	97	112	54	84	117	32
Silk	88	107	102	96	111	80	70	98	49
Wool	80	96	119	98	114	78	72	101	53

* Computed from M. Ada Beney, *Wages, Hours, and Employment in the United States, 1914–1936* ("National Industrial Conference Board Study," No. 229 [New York: National Industrial Conference Board, 1936]).

† Called twenty-five industries by the National Industrial Conference Board because four subdivisions of the industry "Foundries and machine shops," not shown separately here, are included in the total.

during these depressions was unionization. Table 2 shows the extent of unionization in certain groups of manufacturing industries in 1920 and from 1929 through 1933.

Unfortunately, the industry groups in Table 2 are much broader than the industries of Table 1. The inclusion of railroad repair shops in "Iron and steel and their products" of Table 2 probably raises the percentage of unionization considerably. Within the five industries of much more highly organized than food products as a whole.

The industries included in Table 1 in which unionism was an appreciable factor thus probably included boots and shoes, hosiery and knit goods, meat-packing, and the two printing industries in 1920–21, and the same industries with meat-packing excluded in 1929–33. In the two printing industries and in boots and shoes, unions may have been responsible for the rise in real earnings during

TABLE 2

EXTENT OF UNIONIZATION IN CERTAIN DIVISIONS OF MANUFACTURING 1920 AND 1929–33

INDUSTRY GROUP*	PERCENTAGE OF WAGE-EARNERS UNIONIZED			
	1920†	1929‡	1931‡	1933‡
Chemicals and allied products	0.2	§	§	§
Food and kindred products	19.4	6.3	7.1	6.3
Iron and steel and their products‖	28.1	9.4	12.8	13.9
Leather and its manufactures	29.4	14.3	13.6	26.3
Paper and printing	♯	25.2	29.6	30.8
Textiles	15.0	3.3	3.9	1.7

* Only those groups represented in Table 1 are shown.

† Source: Leo Wolman, *The Growth of Trade Unions, 1880–1923* (New York: National Bureau of Economic Research, 1924), p. 88.

‡ Source: Leo Wolman, *Ebb and Flow in Trade Unionism* (New York: National Bureau of Economic Research, 1936), p. 124.

§ Less than one-tenth of 1 per cent.

‖ Includes machinery, transportation equipment, and railroad repair shops.

♯ Paper and pulp, 7.9 per cent; printing and publishing 50.1 per cent.

this group included in Table 1, the degree of unionization was undoubtedly lower than Table 2 indicates; in all but "Foundries and machine shops" it was probably negligible. In the printing and paper group of Table 2, the unionized workers were heavily concentrated in printing, as shown by the 1920 data. Within the leather and products group, unionization was heavily concentrated in boot and shoe manufacturing. In the textile group, hosiery and knit goods was more highly organized than the group as a whole, and in 1920 meat-packing was

both depressions. Unions may also have been responsible for the rise in real earnings in meat-packing and hosiery and knit goods during 1920 and 1921. However, from 1929 to 1933 hosiery and knit goods, despite the substantial degree of unionization in the North, showed the largest decline in real earnings of any of the twenty-one industries. It is also very clear that unionism was not a significant factor in many of the industries showing high stability of money earnings and large increases in real earnings from 1929 to 1933, especially agricultural imple-

ments, automobiles, electrical manufacturing, and iron and steel.

While unionism may, other things being equal, increase the downward rigidity of money wages in a depression, the data suggest that such rigidity exists to a significant extent in nonunionized industries. They further suggest that such rigidity is greatest in oligopolistic industries. This is what would be expected in view of the fact that such industries are most sensitive to public opinion and government pressure. The degree of competition on the product market may be as important as, or more important than, the degree of unionization in explaining interindustry differences in wage movements during depressions.

The idea that worker resistance to a reduced standard of living is the limiting force in downward wage movements is weakened by the data which have been presented. Not only were real wages generally stable or rising, but even money wages fell very little relative to the decrease in employment. This makes it seem likely that many of the unemployed would have accepted work at current money wages even if a substantial money illusion existed. The unemployment in manufacturing during the periods 1920–21 and 1929–33 thus seems to have been involuntary.

The existence of involuntary unemployment implies that wages did not lie on the supply curves of labor. The sharpness with which the data in certain instances support the concept of wages lying above the supply curve may be shown by the example of electrical manufacturing in the period from 1929 to September, 1931. Money wages did not change in this period, and man-hours declined 53 per cent. Unionism was negligible. Consider a supply curve of labor for this industry drawn with money wages on the vertical axis and man-hours supplied on the horizontal axis. Only two hypotheses consistent with the data would explain a wage lying on the supply curve at the end of the period. The first is that the supply curve did not shift but was horizontal over this range of employment. The second is that the supply curve for the industry shifted to the left, in the face of growing unemployment in other industries, so as to reduce the quantity of labor supplied at the old wage by more than half. Neither hypothesis seems at all plausible.

The discussion above is offered as a starting point for the formulation of more realistic theories of wage determination in nonunionized labor markets. The development of such theories is important not only for the understanding of these markets but also for furnishing a benchmark for a correct appraisal of the effects of collective bargaining.

THE WEALTH-SAVING RELATIONSHIP

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THE relationship between accumulated consumer assets and consumer expenditure or saving has received a great deal of attention in recent discussions. There appear to be at least three connections in which this relationship is of interest. One concerns the effect of changing price levels on the real value of consumer assets (the "Pigou effect"); a second concerns the effect of liquid asset creation through government deficits (which we shall call the "Lerner effect"); and a third concerns the effect of asset accumulation through continued private investment (which we shall call the "Keynes effect"). The first has induced much discussion, the second somewhat less, and the third almost none.

The notion that there is a positive relation between wealth and consumption is, for the present note, accepted without development or argument. An a priori case for this relationship can easily be made, in terms of widely accepted postulates of consumer behavior. This was done, for example, by Pigou, in his *Employment and Equilibrium*.[1] In the end, however, the correctness of the assumed relationship can only be established by empirical studies. For the purpose of this note, I am accepting the idea and exploring some of its broader implications.

Professor Pigou's use of this relationship was largely bound up with the question of price flexibility. He has shown that if consumer expenditures depended positively upon the real value of consumer assets, and if wages and prices were perfectly flexible, falling without limit so long as there existed any unemployed resources, any unemployment that ever arose would quickly disappear. Falling wages and prices would increase, without limit, the real value of those consumer assets whose values were fixed in money terms, causing a continued rise in the real level of consumer expenditures until full employment was restored.[2] Patinkin has christened this the "Pigou effect."[3]

[1] A. C. Pigou, *Employment and Equilibrium* (London: Macmillan & Co., 1941), esp. pp. 96–130. (Essentially the same argument is contained in two later articles: "The Classical Stationary State," *Economic Journal*, LIII [December, 1943], 343–51, and "Economic Progress in a Stable Environment," *Economica*, XIV [new ser., August, 1947], 180–88.) At about the same time the same point was made by G. Haberler (*Prosperity and Depression* [3d ed.; Geneva: League of Nations, 1941], pp. 498–500). Professor Haberler insists that this point is inherent in his own earlier discussion, and indeed in the whole classical position, and that failure to see it "exemplifies a curious but widespread color blindness for everything that is not presented in the familiar jargon" (*ibid.*, p. 499, n. 2). I am disposed to argue that this point is essentially different from a general insistence that people will not hoard an unlimited amount of real balances, or that, if prices fall far enough, "something" will happen. T. deScitovsky also makes an independent "discovery" of the idea in his "Capital Accumulation, Employment and Price Rigidity," *Review of Economic Studies*, VIII (February, 1941), 69–88.

[2] The assets principally relevant here are government bonds and government money, including bank deposits to the extent they are "backed" by government bonds and government money. A rise in the real value of a private debt enriches the creditor but impoverishes the debtor. It is not necessary, of course, that the effects on the consumer expenditures of creditors and debtors be perfectly symmetrical. Here, particularly, a detailed analysis would have to consider separately the institutional implications of the existence of the corporate form and of financial intermediaries.

[3] See Don Patinkin, "Price Flexibility and Full Employment," *American Economic Review*, XXXVIII (September, 1948), 534–64.

It should be observed that Pigou's consideration was in terms, not of cyclical, but of secular price changes. But the Pigou effect has also been applied to cyclical price fluctuations.[4] Particularly in the cyclical context, use of the Pigou effect calls forth the justifiable criticism that the *dynamic* effects of *falling* wages and prices might well prevent the theoretical full-employment equilibrium from ever being reached. Hence, it is argued, even if we grant that saving depends negatively on the value of consumer assets, it does not follow that public policy calls for maximizing cyclical wage-price flexibility.[5] It can also be pointed out that the bulk of the assets, fixed price or otherwise, are concentrated in the hands of a relatively small number of high-income recipients, whose consumption might be stimulated very little by further enrichment through falling prices, particularly the sort of falling prices associated with cyclical depression, when the rise in prices during recovery may be foreseen.

In the secular context some of these objections disappear. In the modern economy the prospect of a secularly declining price level seems remote, but a secularly rising price level is easy to imagine. The effect of this on the real value of assets, and thus on saving, is not to be ignored. However, I shall devote no further attention to the Pigou effect but turn to the other two aspects of the asset-saving relationship—the ones I have labeled the "Lerner effect" and the "Keynes effect." I shall discuss first the "Keynes effect" and return briefly at the end to the "Lerner effect."

As Patinkin has noted,[6] Keynes was aware of the relationship between assets and saving. In his discussion of the secularly falling marginal efficiency of capital, which, to him, was the prospect for rich, mature economies, Keynes asked what would happen to an economy whose capital stock became so great that further investment yielded no net return even at a zero rate of interest. One possibility was that such an economy would stumble along at a low level of employment, the community becoming "so impoverished that the aggregate of saving has become zero, the positive saving of some individuals or groups being offset by the negative saving of others . . . the standard of life sufficiently miserable to bring savings to zero."[7]

But there is another possibility. "The only alternative position of equilibrium would be given by a situation in which a stock of capital sufficiently great to have a marginal efficiency of zero also represents *an amount of wealth sufficiently great to satiate to the full the aggregate desire on the part of the public to make provision for the future*, even with full employment."[8] Here, clearly, is a recognition that consumption depends not only on income but upon consumer assets as well. It will be my contention that this neglected "Keynes effect" is relevant to the subsequent discussion of the possibilities for stagnation from excessive capital accumulation.

The first point to recognize is that, under the simplest circumstances of long-run growth, the dependence of saving on assets is of no consequence. Let us suppose that economic growth takes place through capital accumulation but with no change in the "capital coefficient"—the ratio of capital stock to "capacity" output. This growth in capital and income may or may not involve any new technology, but, if it does, the technological innovations must be "neutral" in the special sense of that term used by Harrod—namely, they must require no change in the capital coefficient at any given rate of interest.[9] Assume, further, no secular

[4] E.g., in Milton Friedman's "A Monetary and Fiscal Framework for Economic Stability," *American Economic Review*, XXXVIII (June, 1948), 245–64.

[5] This is essentially Patinkin's conclusion (*op. cit.*).

[6] *Ibid.*, p. 555.

[7] *The General Theory of Employment, Interest, and Money* (New York: Harcourt, Brace & Co., 1936), pp. 217–18.

[8] *Ibid.*, p. 218. (Italics mine.)

[9] R. F. Harrod, *Towards a Dynamic Economics* (London: Macmillan & Co., 1948), pp. 23–28.

change in the rate of interest. Under these circumstances the capital stock and the level of "capacity output" or "full-employment income"[10] will necessarily grow in the same proportion. Assume, further, that the assets of consumers consist only of claims to ownership of productive physical assets. Then consumer assets and consumer income will necessarily grow in proportion, and it becomes idle to inquire whether saving depends on income or assets or both.[11]

[10] These two terms are obviously not identical, and our frequent identification of them conceals a host of problems. Actually, what we are dealing with is a full-employment-of-capital-goods level of income—which will also be a full-employment-of-labor level of income only if the form of the capital goods is such that full use of the capital stock implies full employment of labor. (Full use of capital is an even vaguer concept than full employment of labor. See Evsey Domar, "Expansion and Employment," *American Economic Review*, XXXVII [March, 1947], 34–55, esp. pp. 42–45.) If the labor supply is growing in the same proportion as the capital stock, this means that no change is necessary in the ratio of capital to labor. If labor supply is constant, or growing less rapidly, full use of a growing capital stock implies a constant substitution of capital for labor. Theoretically, with capital input rising more rapidly than labor input, output or income should not rise in proportion to capital stock (with given technology). The problems here are immense and our treatment a vast oversimplification. I take some comfort, however, from the fact that, historically, the ratio of capital to output has apparently been reasonably stable, despite a large increase in capital (and output) relative to labor input.

[11] It is also necessary to assume, as I do throughout this note, either that there are no changes in the distribution of assets among all significant groups of the community or that all such groups have identical asset-consumption functions. I know of no evidence bearing on the appropriateness of the first assumption. However, preliminary analysis of survey data by Dr. James Morgan and Dr. Lawrence Klein of the Survey Research Center indicates that the second is not correct. It is also important to point out that asset accumulation through reinvestment of profits by corporations may have different effects on the saving of stockholders than if the profits had been paid out and reinvested in new securities. Effects may be further distorted when asset accumulation must be reflected through financial intermediaries. Such considerations can be neglected only in the broad preliminary exploration of the sort intended by this note.

At least, the last statement is correct on the assumption that over the entire period investment incentives are such as to maintain full employment, or some roughly constant percentage of full employment. Thus, whether full employment requires a constant, an increasing, or a decreasing percentage of income to be invested (because full-employment saving is a constant, and increasing, or a decreasing percentage of a secularly growing income), *if* this investment is forthcoming, saving can alternatively be said to depend on income, assets, or both.[12]

It is interesting to note, however, that if the secular growth of income is interrupted by short-run lapses below full employment (because investment temporarily fails to be forthcoming in adequate amount), income and assets will no longer vary in proportion, and this fact has interesting consequences. A number of economists have been concerned with the reconciliation of two apparently inconsistent sets of data on saving. The Kuznets data appear to suggest that, over a long period of secular growth, consumption has remained a roughly constant percentage of income. Yet the more accurate annual estimates of the Department of Commerce over a shorter period show consumption rising and falling less than in proportion to income, with the saving percentage growing as income rises and falling as income falls. Although other plausible explanations of this phenomenon have been offered, the asset-saving relationship also suggests a plausible interpretation.

Let us assume that consumption depends linearly on current income and on accumulated saving. For the numerical examples

[12] This may be the reason why the "Keynes effect" fails to show up explicitly in Harrod's most subtle and detailed discussion of the theory of saving (*op. cit.*, pp. 35–62). Harrod is assuming, most of the time, both a constant capital coefficient and steady "growth"; hence assets and income grow together. The only case that he considers in which they do not grow together is that of a "dead-weight debt." As noted below (n. 21), he appears to become confused by this case and offers contradictory suggestions as to the effect.

that follow, assume that the consumption function is

$$C = .8Y + .05A,$$

where C is consumption, Y income, and A accumulated assets. Assume further, for the moment, that the accumulated assets of consumers consist only of claims to ownership of productive wealth—i.e., equities in and indebtedness of business firms. Assume, in addition, that there is a constant ratio between the stock of productive capital and the level of full-employment income,[13] such that $2.00 worth of added capital will raise the full-employment level of income by $1.00. Thus if the accumulated assets of consumers are $200, the productive capital of the economy is also $200, and the level of full-employment income is $100. Constant prices are assumed throughout.

If investment incentives are such that over a relatively long period investment is sufficient to maintain full employment (or some roughly constant percentage of full employment), the growth of income and consumer assets might look as they do in lines (years) 1 through 3 of Table 1. Although the marginal propensity to consume (income) is only 0.8, and the average propensity is 0.9, the secular growth of accumulated saving in the same proportion as the growth of income causes consumption to grow in proportion to income. When, however, in years 4 and 5, investment is inadequate to maintain full-employment income, consumption falls less than in proportion to the fall in income. The reason for this is not only that the marginal propensity to consume is 0.8 (less than the average propensity of 0.9) but also that so long as there is any positive net investment (and saving) consumer assets continue to grow, which tends actually to increase consumption. In year 6, with full employment restored, the saving percentage returns to its previous value.

TABLE 1

HYPOTHETICAL GROWTH SEQUENCE WITH FLUCTUATING INVESTMENT

Year	Productive Wealth (Same as Col. 6) (1)	Full-Employment Income (=.5×Col. 1) (2)	Actual Income (Col. 4+Col. 5) (3)	Consumer Expenditures (=.8×Col. 3 +.05×Col. 6) (4)	Investment Expenditures (5)	Accumulated Consumer Saving* (6)	Percentage of Income Consumer (Col. 4÷ Col. 3) (7)
1	200	100	100	90	10	200	0.9
2	210	105	105	94.5	10.5	210	0.9
3	220.5	110.25	110.25	99.225	11.025	220.5	0.9
4	231.525	115.7625	82.88125	77.88125	5.00	231.525	0.94
5	236.525	118.2625	59.13125	59.13125	0	236.525	1.0
6	236.525	118.2625	118.2625	106.33625	11.82625	236.525	0.9

* Accumulated saving of previous year plus investment of previous year.

The statistician, therefore, who reviewed the average relationship of consumption to income over past decades (let us say), each of which averaged approximately the same percentage of full employment, would find consumption proportionate to income. The influence of assets on consumption would not appear, because assets had grown in precisely the same proportion as the secular rise in income. Yet in short periods of lapse below full employment and return thereto, consumption would behave in the manner familiar to the observer of the twenties and thirties—consumption would decline or increase less than in proportion to the decline or increase in income.[14] It can probably be

[13] See n. 10, above.

[14] Harrod (*op. cit.*) fails to consider this case in the development of his theory of saving. J. S. Duesenberry (*Income, Saving, and the Theory of Consumer Behavior* [Cambridge: Harvard University

seen intuitively that even if all the assumptions employed above were not met in fact, the asset-saving relationship would nevertheless provide an essentially different short run or cyclical consumption function from the long-run or secular function.

Let us return now to the long-run case. As we have seen, so long as we continue to assume a constant capital coefficient, consumer assets grow only in the proportion that productive wealth and full-employment income grow. And if capital accumulation proceeds to the point that available investment opportunities are saturated, the asset-saving relationship appears to offer no rescue. Was Keynes wrong in suggesting that the asset-saving relationship might rescue an economy from stagnation?

The first question is whether the saturation of investment opportunities is indeed a necessary consequence of continued capital accumulation. This question lies outside the scope of the present paper. It should be noted, however, that since 1936 a considerable literature has accumulated on this subject.[15] The upshot of all this discussion is that Keynes's prognostication was not *necessarily* correct; capital accumulation not only raises income but, as well, *because it raises income*, may provide increased investment opportunities. Return, for example, to the first three lines of Table 1. Here investment is growing at a constant annual rate of 5 per cent. If only investors will continue to invest amounts which grow at this constant rate, demand will rise sufficiently for the entire capital stock to be utilized, with no increase in the ratio of capital to actual (as opposed to full-employment) income. Capital accumulation will not necessarily lead to a capital stock which is excessive relative to current income.

The mere possibility that such a rate of "balanced growth" exists does not, of course, mean that it will occur.[16] If investors for any reason failed to maintain the necessary rate of growth of investment, income would fall, and excessive capacity would develop, further retarding investment. Or, if the labor supply failed to grow at the same rate as income, and if there existed some degree of complementarity between labor and capital, labor shortages might prevent the necessary growth of income. If rising income should mean a secularly rising proportion of income saved, there would be trouble. If capital-saving inventions reduced capital requirements at any level of income, balanced growth would be more difficult. (On the other hand, capital-using inventions would ease the problem.)

The first point, then, is that capital *saturation* is not a necessary consequence of capital *accumulation*. That capital saturation might nevertheless be a danger continues to worry most of those who have considered the problem. Are there any other ways by which the problem might be avoided? Keynes, and many of the other authors cited, consider the effects of a fall-

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Press, 1949]) reviews other attempts to reconcile these two sets of data and provides an impressive new interpretation of his own, essentially different from mine.

[15] See particularly the articles by Evsey Domar, "Capital Expansion, Rate of Growth, and Employment," *Econometrica*, XIV (April, 1946), 137–47, "Expansion and Employment," *American Economic Review*, XXXVII (March, 1947), 34–55, and "The Problem of Capital Accumulation," *ibid.*, XXXVIII (December, 1948), 777–94; R. F. Harrod, "An Essay in Dynamic Theory," *Economic Journal*, XLIX (March, 1939), 14–33, and *Towards a Dynamic Economics;* Joan Robinson, "Mr. Harrod's Dynamics," *Economic Journal*, LIX (March, 1949), 68–85; J. R. Hicks, "Mr. Harrod's Dynamic Theory," *Economica*, XVI (new ser., May, 1949), 106–21, and *A Contribution to the Theory of the Trade Cycle* (London: Oxford University Press, 1950); S. S. Alexander, "The Accelerator as a Generator of Steady Growth," *Quarterly Journal of Economics*, LXIII (May, 1949), 174–97; T. S. Schelling, "Capital Growth and Equilibrium," *American Economic Review*, XXXVII (December, 1947), 864–76; Jan Tinbergen, *The Dynamics of Business Cycles*, trans. J. J. Polak (Chicago: University of Chicago Press, 1950), chap. x.

[16] An attempt may be made to show that under some version of the acceleration principle the very growth of income will automatically call forth the necessary growth of investment. Most of the authors listed in the preceding footnote consider this possibility.

ing interest rate on capital requirements. In accordance with traditional capital theory, falling interest rates should permit—i.e., make profitable—the use of more roundabout means of production.[17] Here occurs a fundamental difference of opinion between most Keynesians, who feel that the opportunities for such added roundaboutness are definitely limited, and those like Knight who insist they are unlimited. If they are indeed unlimited, falling interest rates (whether this occurs "naturally" or must be induced, at least initially, by monetary action to overcome the obsolete expectations of speculators) are the answer to all problems of capital accumulation. If, with Keynes, we reject this possibility, falling interest rates may provide some added investment opportunities but only some. What is most important to note is that it is *falling* interest rates, not *low* interest rates, which open up added investment opportunities. Each fall in the interest rate makes profitable the deepening of capital, and this deepening, while it proceeds, requires net investment. But corresponding to any given rate of interest there is an optimum stock of capital (in the absence of innovations, population growth, etc.), and, once this stock is achieved, no further net investment is required.[18]

But the same is not true of the effect on saving. A deepening of the capital stock means a growth in the capital stock relative to income, and consequently a growth in the aggregate of consumer assets relative to consumer income.[19] Hence, if consumption depends positively on assets as well as on income, capital-deepening should reduce the propensity to save. This Keynes appreciated, but it appears to have been largely overlooked in the subsequent discussion of capital accumulation. Whether the "Keynes effect" provides a complete and unassailable final bulwark against stagnation from excessive capital accumulation (in an economy with a high saving propensity) rests essentially on two questions of fact: (1) "How much capital-deepening can be secured by the progressive lowering of the interest rate to its lowest practicable level?" and (2) "How strong is the relationship between assets and income—to what extent does wealth accumulation reduce the desire to save?" Although it seems overoptimistic to imply that asset accumulation through private investment will inevitably yield an eventual full-employment equilibrium, Keynes was surely correct in suggesting its relevance to the problem.

We turn, finally, to the "Lerner effect." We can see its relationship to the previous case by recalling one assumption made in the previous discussion—namely, that consumer assets consist only of claims to ownership of means of production. In our previous model we had, apparently, an impossi-

[17] It is not frequently emphasized that the greater roundaboutness includes the increased use of consumer durables. Lower interest rates reduce the cost (or opportunity cost) of durables, including, of course, housing.

[18] Cf. A. H. Hansen, in *The New Economics*, ed. S. E. Harris (New York: A. A. Knopf, 1947): "In so far as anything can be achieved (and something can within limits be done) by reducing as far as possible the rate of interest, this method, obviously, from the long-run standpoint, is non-recurring and quickly runs out. The movement *along* the marginal efficiency curve would be a 'once for all' movement were it not for the *upward shift* of the curve, due to growth and technical progress. . . . It is not necessary to argue that the marginal efficiency schedule is highly inelastic. The movement *down* the curve cannot be of great importance for continuing income and employment creation. . . . Thus, little can be expected for *continuing* investment from progressively lowering the rate of interest, even though this were feasible. A low rate of interest is desirable, nevertheless, because this permits an approach to 'full investment' which would mean higher productivity per worker. But in the absence of dynamic growth and innovation, a constant level of the rate of interest, no matter how low, would ultimately result in zero net investment" (pp. 139–40). (Italics in original.)

[19] Actually, a fall in the rate of interest means a growth of capital relative to income even if no "real" deepening occurs. Directly or indirectly, immediately or ultimately, a fall in the rate of interest will raise the aggregate value of income-yielding assets relative to income. The rise in the value of bonds would gradually be wiped out through maturity and refunding, but the same is not true of private equities.

ble situation, in that consumers had no money balances. We could remedy this defect by supposing that a banking system or monetary authority monetized some part of the existing assets, taking securities from the hands of the public and giving the public equivalent money in exchange. This would require no essential change in the previous model. Suppose, however, that we also allow for money or other asset creation in excess of this, as, for example, through the monetization of a nonproductive asset (e.g., gold) or through the issuance of government money or government bonds to finance deficits incurred other than through public investment in productive assets. Here, again, if the stock of such money and debt grew only in proportion to the secular growth of income, there would still be no scope for the asset-saving relationship. If this condition fails to obtain, however, the "Lerner effect" comes into play. To keep our case as simple as possible, suppose that at first the only money consisted of that issued to monetize existing claims to productive wealth but that at some point, new consumer assets, not equivalent to new productive wealth, are issued. In Table 2, lines 1 through 3 are identical with Table 1. In year 4, however, the government engages in nonproductive spending, say, for war, financing its expenditures (to the extent of $50) by printing money or issuing bonds. Inflation is prevented, we assume, by direct controls on consumption and investment. Year 5 (postwar) finds consumers with accumulated saving greatly in excess of the productive wealth of the economy—consumers now have $50 of saving which is not matched by productive wealth. At full employment in year 5, consumers would spend substantially more than 90 per cent of income, and, if attempted investment should exceed the figure entered in column 5, only inflation could result.

Even "normal" investment expenditures (10 per cent of income) will be inflationary, because the consumption function has been lifted relative to the level of full-employment income. Consumer assets have grown relative to producer assets, and consumption has risen relative to full-employment income. The wartime savings have made consumers feel wealthy and have raised their desire to spend, without the productive capacity of the economy having grown in proportion, as it would have done had the savings been "offset" by productive investment rather than unproductive deficits. The legacy of war finance in our model is inflationary quite independently of whether the deficits were financed by money creation or bond sales.[20] Even if the bonds were nonmarketable, consumers, believing them to be part of their wealth, would behave in the way suggested. Only when the price level

TABLE 2

HYPOTHETICAL GROWTH SEQUENCE WITH GOVERNMENT DEFICITS

Year	Productive Wealth (1)	Full-Employment Income (2)	Actual Income (3)	Consumer Expenditures (4)	Investment Expenditures (5)	Accumulated Consumer Saving (6)	Nonproductive Deficit-financed Government Expenditure (7)
1	200	100	100	90	10	200	0
2	210	105	105	94.5	10.5	210	0
3	220.5	110.25	110.25	99.225	11.025	220.5	0
4	231.525	115.7625	115.7625	60.7625	5.0	231.525	50
5	236.525	118.2625	118.2625	108.93625	9.32625	286.525	0

[20] I deliberately neglect the question whether saving depends as well on the *composition* of the asset holdings. My own feeling is that the composition is less important than the volume, but this is purely an armchair opinion.

rose, and the value of the accumulated saving fell sufficiently, would the difficulty be surmounted.[21]

This last case brings us to the proposition, discussed by Lerner,[22] that, under stagnation conditions, deficit finance to maintain full employment might be self-limiting, because the necessary deficits would be financed by the creation of consumer assets (debt or money) which would eventually so saturate the desire to save as to eliminate any tendency for saving to outrun private investment at full employment. What Lerner did not clearly state was that this would work only to the extent that the assets created for consumers to hold were not matched by new productive wealth and increased productive capacity; for, in the latter case, full-employment income would also have grown, and the problem of maintaining full-employment income might be no nearer solution than before. To be sure, Lerner does recognize that the increased potential output from productive public investment provides an offset to the increased consumer demand arising from the added consumer assets.[23] This, he notes, would be true of productive *private* investment as well. But, while he does not so state, he clearly implies that in either case it would be only a partial offset. Eventually, a full-employment equilibrium would be achieved by sufficient saturation of consumers with accumulated assets. This implication seems unjustified in the absence of the spelling-out of the particular assumptions necessary for this result to be achieved. Assets must rise relative to full-employment income, and this can occur only through unproductive use of funds or through a deepening of capital.

[21] This interpretation of war finance is also explicitly made by Harrod (*Towards a Dynamic Economics*, p. 58). He also seems to suggest (p. 57), however, a possible reverse effect—the existence of a "dead-weight debt" causing excessive saving. The basis for this suggestion is not entirely clear.

[22] A. P. Lerner, "The Burden of the National Debt," in *Income, Employment, and Public Policy: Essays in Honor of Alvin H. Hansen* (New York: W. W. Norton & Co., 1948), pp. 255–75, esp. pp. 264 ff.

[23] *Ibid.*, pp. 273–74.

HOUSEBUILDING IN THE SAN FRANCISCO BAY AREA

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IN THE past the size, structure, and attributes of housebuilding firms have been unknown quantities. Although there have been indications of important basic shifts in the structure of the industry, no data to show the direction or extent of these changes have been available.

As a step toward filling this gap, a comprehensive survey of housebuilders in the San Francisco Bay Area has been conducted under the auspices of the Bureau of Business and Economic Research of the University of California. This survey makes available for the first time primary data on the industry, including information on the actual size of builders, on the importance of operative or merchant (as opposed to contract or individual) building, and on selling prices as related to both area and size of builder. The survey also shows the extent or the lack of interdependence between housebuilding and other construction activities.

Prior to this study, our chief source of knowledge concerning the size of housebuilders was the pioneering surveys of issued building permits conducted by the Bureau of Labor Statistics.[2] As is made clear in these studies, permit data leave many questions unsatisfactorily answered. This is also pointed out by Leo Grebler, who states:

> These findings, based on building permit data, have often been used to characterize the small-scale character of house building, without considering the qualifications of the data. In the first place, they refer only to operations within city limits, whereas many of the large-scale projects are located outside the city limits. Second, any individual who builds a single-family house is enumerated as a "builder," including an owner acting as his own general contractor, a contractor building a custom-made house, a craftsman building a single house on the side either on contract or for sale, and others building one house on a commission or salary basis as agents of owners without deriving their sole livelihood from these operations. The data thus are not indicative of the scale of operations of business firms engaged solely or principally in the production of houses. Third, where builders obtain building permits under more than one name, as is the case when a corporation is formed for each project, the data may not reflect the true scale of operations, at the firm's level.[3]

In order to show how the present survey avoids these problems, a brief outline of its construction and methods will follow. The survey was based upon a complete listing of all individuals or firms who obtained one or more housebuilding permits in any or all of the fifty-two permit centers of the San Francisco–Oakland Census Metropolitan Area during the period October 1, 1948, to September 30, 1949.[4] The census area contains the six counties of San Francisco, Alameda, Contra Costa, Solano, San Mateo, and Marin, with a total population of over 2,200,000. It includes cities of all sizes as

[1] I want to acknowledge the generous financial assistance of the Bureau of Business and Economic Research of the University of California in making this study possible. I am also indebted to Wells Keddie and Robert Williams, who aided greatly in the collection of data; to Willard Wall, who was responsible for most of the statistical computations; and to Jack Rogers for helpful criticism.

[2] "Builders of 1-Family Houses in 72 Cities," *Monthly Labor Review*, September, 1940, pp. 732–39 (Serial No. R.1151); "Operations of Urban Home Builders," *Monthly Labor Review*, May, 1941, pp. 1283–85 (Serial No. R.1312); and "Builders of 1-Family Houses in 11 Areas, 1940 and 1941," *Monthly Labor Review*, April, 1943, pp. 801–7 (Serial No. R.1524). The Bureau of Labor Statistics is now engaged in an effort to obtain on a national basis some of the types of data discussed in this article.

[3] *Production of New Housing* (New York: Social Science Research Council, 1950), p. 35.

[4] For this study a house or unit was defined as either a one- or a two-family house. More than 95 per cent of the units were for single-family occupancy.

well as a large rural nonfarm population. Since a permit is required for any new building anywhere within the entire area, any firm building one or more houses was included.

A questionnaire was submitted by mail to a stratified sample drawn from this listing. A further sample of initial nonrespondents to the mail survey was checked in person. This made possible the proper classification of builders, the determination of the number of firms taking out permits under more than one name, and the acquisition of additional data not otherwise available.[5]

I

A critical problem in describing the housebuilding industry and especially in determining the size of enterprises is the classification of builders as either firms or individuals. A considerable number of houses are constructed by people in their leisure time. If these builders are included as firms, they give a totally incorrect picture of the industry and of the manner in which it operates.[6]

Table 1 indicates that about 2,000 houses were built in the Bay Area by individuals.[7] This was about 11 per cent of all units constructed. Two-thirds of these were built by people with no relationship to the industry

TABLE 1

HOUSES BUILT BY INDIVIDUALS IN THE BAY AREA IN 1949

Method of Work	Classification of Builder		Total
	Employed in Industry	Other Types of Employment	
Worked part time and vacations	638	1,004	1,642
Worked full time	.....	116	116
Primarily supervised	18	226	244
Total	656	1,346	2,002
Built for owner occupancy	454	1,166	1,620
Sold or rented	202	180	382

—primarily amateurs who read a book or relied upon a friend with some experience and set out to build their own houses. The remainder of these houses were built by men whose jobs and skills were related to the in-

[5] Since the estimates in this report are based on a stratified random sample of the population of housebuilders in the San Francisco Bay Area, there is a probability that because of sampling variability the estimates may differ somewhat from figures which would have been obtained from a complete enumeration using the same methods. For example, as a result of the survey it is estimated that 17,795 one- and two-family dwellings were completed in the area in 1949. The .95 fiducial limits of this estimate are ±972, i.e., 19 out of 20 estimates from samples drawn from this population would fall within the limits of 16,823 or 18,767, or the estimate of 17,795 would be within 5.5 per cent of 19 out of 20 other estimates taken from this universe.

The sample was drawn from a stratified population totaling 3,685 builders. There were 604 responses to the mail questionnaire and 226 replies obtained in person from a subsample of the nonrespondents to the mail questionnaire.

In addition to the above problem of sampling variability, any survey is subject to "normal" biases in responses similar to those which would be received in a complete enumeration. A spot check of the replies which varied most from permit data indicated a probable upward bias in some replies, particularly where the respondent relied upon his memory rather than his records.

The total bias of this type apparently is not great. An independent estimate of the total number of units constructed can be derived directly from the number of permits granted by each permit center rather than from the firm's reports. This independent estimate shows 16,905 units completed within the area during the year. Thus the two estimates differ by 5.3 per cent, but the .95 confidence intervals of the two estimates overlap; and both might easily have been drawn from the same universe.

[6] Cf. Grebler, *op. cit.*, p. 6.

[7] The state of California requires everyone, with the sole exception of an owner building for his own occupancy and not for sale, to obtain a license (State of California, *Business and Professional Code*, c. 9, Div. 3, Arts. 7025–53). A preliminary classification into firms and individuals was made based on this fact.

Since important facts and the ability to answer particular questions varied, somewhat different questionnaires were used for enterprises and individuals. The data in this report are based on the replies to the questionnaire and not on the preliminary classification. Shifts occurred between the original groups in a small percentage of cases.

dustry—maintenance carpenters, building inspectors, or mechanics working for others who frequently used their spare time to do building for themselves.

In most cases individuals built in their leisure time—week ends, vacations, or after work. Six per cent, however, put in full time on the job. Aided by their families and friends, individuals normally did most of the basic work; but they subcontracted out plumbing, electrical work, and sometimes other specialties. In 12 per cent of the cases the individual merely acted as a general contractor and supervisor, hiring carpenters, subcontractors, and laborers.

The number of individuals building during the year was 22 per cent greater than the number of firms. This figure is so large that, unless the two groups are classified separately, statements concerning average builders have little or no meaning.

II

In this section we shall look into the characteristics of firms in the industry. Statistics are presented on the size of enterprises, amount of contract building, area within which firms build, and price classes. In addition, the analysis draws on unpublished data which include a breakdown of other types of building performed by housebuilders, total volume of building, employment figures, and months active.[8]

The figures which follow show the prime importance of technical processes in influencing the size of housebuilders. It is evident that the need to attach houses to the land and to erect each on a separate location may keep the operations at a site (equivalent in concept to a plant in economics) fairly small. It appears from the statistics that marketing also has had an important influence. When firms appeal to the low-price mass market, their size increases. On the other hand, when they are primarily custom builders working on individual contracts, their size remains small.

TABLE 2

NUMBER OF HOUSES CONSTRUCTED IN 1949 BY FIRMS CLASSIFIED ACCORDING TO SIZE

Number of Units Completed	Number of Firms in Class	Total Number of Units Completed			
		All Areas	On Contract	In Tracts*	Outside Bay Area
1	270	270	143	.....	.....
2–4	694	1,985	1,139	.....	18
5–9	398	2,587	1,405	254	83
10–24	188	2,936	585	1,067	22
25–49	57	2,030	492	2,010	84
50–99	21	1,482	58	1,349	130
100 and over	30	6,195	45	5,860	1,351
Total	1,658	17,485	3,867	10,540	1,688

* A tract was defined as an area in which a single firm built five or more houses.

A. SIZE, LOCATION, AND BUILDING ON CONTRACT

The basic information on size and production of housebuilding firms can be found in Table 2. The most striking fact is the number of firms and their wide diversity of type. The volume of completions per enterprise varies from one unit to over five hundred and the volume of sales from $10,000 to over $10,000,000 per year.

An apparent growth in size and concentration has occurred primarily as a result of the increased importance of large firms producing for the mass market, but firms of all

[8] These other data are not published at this time because of space limitations. They will be published in the future. Persons requiring such data prior to that time may send specific requests to the author.

sizes still play an important role. The businesses which built over 50 houses during the year, although only 3 per cent of the total, accounted for over 44 per cent of the completions. The 245 enterprises in the 10–49 bracket completed 28 per cent of the total, as did the 1,362 firms who built under 10 units.

The average of completions per firm is much greater than estimates for the prewar period. The average number of completions per builder in this area in 1949 was 10.5 units as compared to the 1938 estimate of 2.2 for builders nationally, or 4 houses per Bay Area builder at that time.[9] With the builders of single houses omitted, to correct roughly for individuals—not enterprises—included in the 1938 study, the averages would be 12.4 houses per firm for this study as contrasted to 4.9 for the national average, and 7.6 for the Bay Area cities in 1938. Even more striking is the fact that in 1949 the median house in the Bay Area was built by a firm that finished 40 others. In 1938 the median house nationally was built by a firm that completed only 4 units, while in the four Bay Area cities it was constructed by a firm that built 10 units.

While firms are larger than previously supposed, this could reflect either an actual change in size or a more comprehensive coverage in this survey. This study reports the complete building activity of businesses rather than their activity in a single permit area. Housing firms are extremely localized, but an incorrect picture is obtained if one observes only their activity in a single permit center or even within an entire metropolitan area.

In the Bay Area, 442 firms (27 per cent of the total) built houses in more than one permit area, and 150 built in more than one county. Of these, 64 firms built a total of 1,688 houses outside the census area. Firms build with considerable freedom in cities and areas outside their home location, but their range of activity is not very wide. Almost all the units built outside the census area were in the remainder of the homogeneous business area described as the Bay Region. Less than 1 per cent of the houses completed by firms building in this area were built at a distance of more than 100 miles from the firm's headquarters. Only a few outside firms did any housebuilding in the area, and they were small.

It is obvious that the combination of permits issued throughout the area means a lower estimate of the total number of firms and a higher average size than if the permits had not been put together. Inclusion of units built outside the metropolitan area raises the average size 11 per cent above that which would be calculated by using only houses completed within the area. Within size classes, the number of firms in the 100 and over group is increased by 30 per cent; while other classes show an increase of 4 or 5 per cent, and the two lowest classes are decreased.

Data based upon selected individual permit centers might, however, have indicated either a higher or a lower concentration depending upon the choice of centers. This occurs because large firms concentrate most of their building in a single center. In these particular areas large firms will show almost their true size; while medium and small firms, with a major share of their activity spread over several centers, will appear smaller than they really are. For this reason no exact comparisons can be made with the 1938 data.

Assuming a random distribution of biases, however, we can compare inequality of production with that of 1938 by the use of a Lorenz-type curve. It is found that inequality has increased. Builders of more than 100 houses accounted for 35 per cent of completions in this survey, compared to 17 per cent for Bay Area firms of this size shown by the permit data in 1938 and to under 11 per cent for the large firms in the national total.[10]

The fact that the number of sizable firms has increased greatly and that they produce a very large number of houses compared to

[9] "Builders of 1-Family Houses in 72 Cities," *loc. cit.*; "Operations of Urban Home Builders," *loc. cit.*

[10] "Builders of 1-Family Houses in 72 Cities," *op. cit.*, pp. 6–8.

the estimates of previous studies is important. These firms are operative or merchant builders. They engage in most normal entrepreneurial functions—assuming the initial risk, determining the location, design, quality, and price of their units within the limits set by the financing institutions and local governments.[11] These firms avoid most of the problems of small size, which many writers have claimed is the bane of the housing industry.

Table 2 indicates also that, while custom building continues, it is not the most prevalent type of construction. In fact, it appears to be restricted to a particular type of firm and house. Only 22 per cent (3,867) of the units completed by firms were done on contract, compared to over 50 per cent in 1938.[12] To this must be added the 2,002 units completed by individuals to give the total number custom built.

Obviously a high correlation exists between size of firm and type of building. At one extreme the firms which completed over 100 houses per year did less than 1 per cent of their work on contracts, and only 5 per cent were not in tracts; at the other extreme the firms in the 1–9 bracket did over 55 per cent of their construction on contract, and almost all were built on individual lots.

B. DISTRIBUTION BY PRICE

Table 3 shows a distribution by price class of the houses completed for each type of firm. The median house produced in the Bay Area in 1949 sold for about $10,750.

TABLE 3

NUMBER OF HOUSES CONSTRUCTED IN 1949 BY BAY AREA BUILDERS DISTRIBUTED BY PRICE CLASSES AND SIZE OF FIRM

Size of Firm by Completions	Houses by Price Classes					
	Under $9,000	$9,000–$11,000	$11,000–$13,000	$13,000–$15,000	$15,000 and Over	Total
	Numerical Distribution					
1	37	91	26	32	84	270
2–4	141	387	218	276	964	1,986
5–9	339	851	310	225	862	2,587
10–24	264	1,048	528	508	588	2,936
25–49	362	722	315	140	491	2,030
50–99	601	319	234	190	138	1,482
100 and over	2,904	1,490	1,148	388	265	6,195
Individuals	652	357	307	136	550	2,002
Total	5,300	5,265	3,086	1,895	3,942	19,488
	Percentage Distribution					
1	14	34	9	12	31	100
2–4	7	19	11	14	49	100
5–9	13	33	12	9	33	100
10–24	9	36	18	17	20	100
25–49	18	36	15	7	24	100
50–99	41	21	16	13	9	100
100 and over	47	24	19	6	4	100
Individuals	33	18	15	7	27	100
Total	27	27	16	10	20	100

[11] Grebler, *op. cit.*, p. 7.

[12] "Operations of Urban Home Builders," *loc. cit.*

Builders of over 50 houses sold about 45 per cent of their total production for under $9,000. Two-thirds were priced under the general average.

In addition to demonstrating the concentration of the large producers in the mass market, Table 3 indicates that, the smaller the builder, the more expensive a house he is likely to produce. This reflects the fact that houses built on contract are produced for a small select market which can afford, and usually demands, all types of special services. This is a custom market which compares with the high-priced custom market in many other goods.

area lies outside the incorporated centers. Its population is almost entirely rural nonfarm.

The 1950 populations for these groups are 1,417,000 for the central cities, 428,000 for the suburbs, and 381,000 for the nonincorporated areas. In the central cities one new house was completed in 1949 for every 464 people. The ratio was one house to every 62 for the suburbs, and one to 49 in the nonincorporated areas. In numbers, 3,051 houses (17 per cent) were built in the central cities, 6,917 (38 per cent) in the suburbs, and 7,829 (44 per cent) in the nonincorporated areas. Thus the rate of building outside the central cities is almost seven times as great

TABLE 4

NUMBER OF FIRMS CLASSIFIED ACCORDING TO SIZE AND BY SIZE OF POPULATION OF AREA IN WHICH FIRM PREDOMINANTLY BUILT

SIZE OF FIRM BY COMPLETIONS	NUMBER OF FIRMS				PERCENTAGE DISTRIBUTION			
	Non-urban	0–49,000	50,000 and Over	Total	Non-urban	0–49,000	50,000 and Over	Total
1	40	125	105	270	15	46	39	100
2–4	268	237	189	694	39	33	28	100
5–9	137	156	105	398	34	40	26	100
10–24	98	57	34	189	52	30	18	100
25–49	34	14	8	56	61	25	14	100
50–99	11	8	2	21	52	38	10	100
100 and over	12	15	3	30	40	50	10	100
Individuals	897	737	368	2,002	45	37	18	100

C. DISTRIBUTION OF PRODUCTION BY AREA

Much interest has been shown in the preliminary census reports of the movement of population from the central cities to the suburbs. This movement is confirmed by our survey. For the purposes of analysis the areas in this survey break down into three groups. The first is made up of the five cities of over 50,000—the central city on the west side of the bay and a complex of four nearly contiguous cities forming an economic and social central city in the East Bay. The second group includes the 42 incorporated areas with populations under 50,000 outside the central cities. These areas are primarily suburbs, although a few on the outskirts of the area are more self-contained. The third

as inside, and even the absolute amounts are more than four times as great.[13]

A definite relationship, shown in Table 4, exists between the size of the builder and the area within which he operates. The large-scale builder, being interested primarily in large expanses of relatively cheap land for tract development, must go outside the city to obtain it. The percentage of small firms building primarily in the central cities is three times as high as the percentage of large firms. In so far as the small builder utilizes land in built-up areas, he may not be competing with the large firm but is actually

[13] While it might be expected that these figures would be altered somewhat by a greater concentration of apartments in the central cities, this apparently was not the case in 1949.

dealing in an entirely different product in a separate market.

These same facts are reflected in a strong relationship between area and price of house. For example, 40 per cent of the houses built in the nonurban area sold for under $9,000. This compares to 24 per cent in this bracket for the houses built in incorporated areas under 50,000 in population and to only 5 per cent for the central cities. This high intercorrelation between size of builder, area, and price may be an important explanation of the increased movement outside the city.

D. RELATIONSHIP OF HOUSEBUILDING TO OTHER SOURCES OF INCOME

The small size of builders shown by previous studies has given rise to a good deal of speculation as to the sources of income of firms engaged in housebuilding. As the Bureau of Labor Statistics has stated: "In any case, it appears that urban home builders in 1938 either (1) had sources of income other than home-building, (2) made a large profit on each house, or (3) received very little income."[14] Similarly there has been a good deal of uncertainty as to the relationship of the housebuilding industry to the remainder of the building industry. It has usually been considered that dwellings are not commonly constructed by a special class of producer. Statistics of all types of construction are lumped together. Attempts to classify housebuilders separately have failed.[15]

This survey indicates that, at least in the San Francisco Bay Area, the overlap between housebuilders and others is not great. In 1949, 90 per cent of the houses built by firms were constructed by businesses which did only housebuilding or received less than 10 per cent of their income from other types of building. Two hundred and forty general contracting firms (defined as firms who did more work on other types of building than housing) built houses, but they accounted for only 5 per cent of the total; and one-third of this number was contributed by two large general contracting firms who also did tract building. The final 5 per cent of houses were built by another two hundred firms who also did general building but whose housing volume made up from 60 to 90 per cent of their total. Thus it is correct to speak of a housebuilding "industry" as such, remembering that classifying building firms as members or nonmembers of the industry on the basis of a set percentage of total volume devoted to housebuilding must be somewhat arbitrary.

We cannot answer the problem of income as easily. More than 1,300 firms in this area completed less than ten houses in 1949. The average enterprise in this group did less than a $50,000 business. How could a firm exist with this small volume? Our survey offers three primary explanations of the answer.

1. Some firms in this group were general contractors and not primarily housebuilders. As just stated, 400 firms received most or a sizable percentage of their income from buildings other than houses. In addition, others may have had income from real estate or land-development activities.

2. More than half of the firms among these 1,300 were only in business part of the year (nine months or less). If the firm only builds for part of the year, its size when measured by yearly volume will obviously be smaller than its monthly volume or rate of construction. Yet with a rapid rate of turnover—and housing has had the largest of any industry in most postwar years—the percentage of firms who are in business for only part of the year must be high. Turnover in building includes not only the normal attrition of all industries due to death, sickness, failure, etc., but is higher because of the fact that with low capital requirements many mechanics are in the habit of setting up their own enterprise when a very favorable contract or speculation is available, and then allowing it to fall into disuse until the next similar opportunity arises.

3. Many builders receive their income primarily in the form of wages and not as a return on overhead or as profits. This simply reflects the large number of individual entrepreneurs in this industry whose income from

[14] "Operations of Urban Home Builders," *op. cit.*, p. 1.

[15] M. L. Colean, *American Housing* (New York: Twentieth Century Fund, 1947), p. 63.

their firm may actually be less than the wages they would draw if performing similar work for others. They have little or no overhead, work as mechanics, and may or may not make profits. This factor of possible negative profits is not unique in housebuilding but is familiar in many other industries with easy entry, as, for example, family farms, grocery stores, and service stations.

The survey results show the interaction of these various factors. For example, only 16 firms of those completing a single house reported that they were in business for the whole year and did not have income from other types of building. All the other firms reporting a single completion and no other building were in existence for six months or less. None of these firms reported any offsite employees. For the whole group of firms falling in the 1–9 bracket only 340, or one-fourth of the total, reported that they did only housebuilding and were in business for twelve months.

CONCLUSIONS

In the presentation of the basic data, a number of facts about the housebuilding industry have emerged which make it possible to reach certain general conclusions. Most important is the realization that housebuilding is no longer primarily a contract industry producing individually designed houses to order.[16]

While by most standards of comparison the housebuilding industry consists of small firms, the size of its enterprises and concentration of production are above prewar estimates. In fact, the average number of completions per firm is four and a half times greater than before the war.

The industry is more specialized than most economists have thought. Ninety per cent of the houses constructed were completed by firms which were housebuilders alone. On the other hand, firms whose housebuilding volume is small are likely either to do other building or to have been in business for only part of the year.

Houses in the San Francisco Bay Area were primarily produced by merchant (operative) builders for their own account. One-third of the total, however, were still custom built. When the custom-built houses are further subdivided, we find that one-third were constructed by individuals and the remainder by enterprises. Although the central cities contained over 60 per cent of the population in 1949, only 17 per cent of the new houses were constructed in these areas. The largest number of units were erected in the rural nonfarm districts.

It appears clear from the data that the industry is divided into firms producing in different types of markets. More than one-third of the houses completed by firms were built by the largest builders (over 100 completions). These firms adopt their own designs, develop their own land, plan their own methods and rates of production, and offer the completed houses for sale to prospective buyers. They build primarily in tracts in either the rural nonfarm or the suburban parts of the area. They produce most of the inexpensive houses, developed primarily for a mass market. These firms specialize in housebuilding and do but little of other types of building.

On the other hand, there are 720 firms who build primarily on contracts. These firms are much smaller, completing an average of about 4.7 units per firm in the year. They work primarily on custom-built units designed by or for individual purchasers. These houses are built on individual lots, are more likely to be in the central cities, and fall into the higher price brackets. The firms building houses on contract are likely to engage in other types of building also.

Between these two groups are small and medium-sized firms who primarily build for their own account. These firms may be building in small tracts or, as likely, on individual lots in the central cities. They build medium-priced houses in styles which they hope will appeal to individual buyers.

[16] The effect of this change on the operations and efficiency of builders is now being studied under a research contract between the Office of the Administrator of the Housing and Home Finance Agency and the Bureau of Business and Economic Research of the University of California in accordance with Title IV of the Housing Act of 1949.

BOOK REVIEWS

Dogma und Wirklichkeitssinn in der Sowjetwirtschaft. By ADOLF WEBER. (*Sitzungsberichte der Bayerischen Akademie der Wissenschaften, Philosophisch-historische Klasse,* Jahrgang 1950, Heft 1.) Munich, 1950. Pp. 52.

Many orthodox economists have felt embarrassed when called upon to explain economic progress made under an authoritarian regime. It is not surprising that a few of them have dodged the issue by simply denying that any progress was made. Professor Adolf Weber, who, in his many writings, has closely followed the classical line of reasoning, prefers to offer a more sophisticated solution. He contends that the Soviet economists have been inconsistent. They allowed for significant deviations from the socialist doctrine, and thus they compromised with capitalism. This "realistic approach," he contends, explains their partial success or, at least, the delay in the collapse of their system.

Weber has grouped the sins of the Russian economy under four headings. One of them is the elimination of what he calls "productivity of freedom," the destruction of the businessman's initiative and of his impulse to creative work. Other sins of the Russian economy are the lack of the regulatory function performed by a free market, the neglect of foreign trade, and, finally, the overemphasis on capital accumulation as shown by the expansion of capital-goods industries at the expense of consumer-goods industries. This last policy is illustrated by figures taken from prewar statistics. From 1928 to 1937 means of production increased from 39.4 to 57.8 per cent of total production, while the share of consumer goods declined from 60.6 to 42.2 per cent (p. 25). Although this industrialization plan is in line with Marxian idolatry of technical progress, Weber considers it a basic blunder because it forgoes the use of technology for raising the standard of living. Under the Soviet system, neither profits nor social welfare was maximized.

How was an early collapse of this economy prevented? Weber believes that it was because the Soviet experts in various respects imitated capitalism. He refers to the differentiation of wages, the launching of the scheme of "socialist competition," and the leading position granted to the industrial manager. The significance of these widely discussed policies should not be underrated. It would even be easy to cite more cases of compromise of the Soviet system with capitalism. It is doubtful, however, that those deviations from the official doctrine fully explain the final outcome. Apparently, other policies also contributed to industrial progress. The increase in output due to the exploitation of ten to eighteen million people herded into concentration camps could hardly be classified under compromises with capitalism.

Yet the final breakdown of the system, according to Weber, has been merely delayed. Although in this regard his material is fragmentary, he maintains that, throughout the Bolshevist period, Russia's welfare, measured in terms of consumer goods, has not risen above the level of the old czarist regime. As he finally says, the Soviet economy contains the "seeds of eventual death." Still the severity of this judgment is somewhat tempered because in the same breath he extends this forecast to the "capitalist profiteering economy" (p. 52). The reader may also wonder whether, from this point of view, the case of the Soviet economy differs essentially from other perishable man-made institutions.

The reliability of the material used for Weber's diagnosis is open to question. Even those who follow him in identifying social welfare with the immediate availability of consumer goods may consider his factual data to be defective. In commenting on them, Weber himself is critical. He sides with Abram Bergson's violent complaint that "to interpret Russian statistics, one should be a poet and dramatist." Are we, however, better off in drawing factual conclusions from the reports of eyewitnesses, such as the German prisoners of war who returned from Russia after the end of hostilities? Most reports of this kind are based on limited experience. They cannot be free of subjective and emotional elements. As Weber admits, his information is incomplete in other respects also —for instance, concerning the German "reparations" and the deliveries from the satellites, which may have considerably affected both prices and wages.

The study has been published with the re-

ports of the Bavarian Academy of Sciences. To some extent it represents a condensation and refinement of another book by the same author which appeared in 1949, *Marktwirtschaft und Sowjetwirtschaft: Ein Vergleicht* (Munich). Like Weber's other writings, it impresses the reader by its clarity of presentation and its brilliance of style.

FRITZ KARL MANN

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Washington, D.C.

Economic Survey of Asia and the Far East, 1949. Lake Success, N.Y.: United Nations, 1950. Pp. xix+485. $3.00.

With this survey the United Nations has supplied interested readers with a compact collection of facts on the economic developments in the Far East during 1949. The first part is entirely factual, and for each of eleven fields—food and agriculture, industry and mining, transportation, labor, currency, banking, public finance, inflationary and deflationary tendencies, international trade, balance of payments, and commercial policies—there is first a broad general survey for Asia and the Far East and then a review for each of the sixteen countries in that area. Each of the fields is covered in a separate chapter; each of the chapters is almost independent of the others; and each has only a minimum of analysis. This part, together with the previous reports for 1947 and 1948, presents probably the best single summary of the economic events occurring in the Far East since the war, as well as some comparison with the prewar period. But really to justify the broad title of this report, as well as to make it of value to the economist, the authors should give more analysis and integration. For example, the chapters on currency, banking, public finance, and inflationary and deflationary tendencies are obviously closely related to one another. Therefore, these problems might have been treated as a unit, within an analytical framework, and relationships pointed out to other parts, rather than with each chapter as a disjointed fragment. Such a treatment, it is true, might raise questions of policy and criticism, which the United Nations might not wish to do; but it would also be of greater value.

The second part of the report is devoted to problems of economic growth in the area and therefore represents an advance over the previous reports. Chapter xii attempts to analyze the basic population, resource, capital, and food-supply factors in the region which determine its position in the world economy. It is a good brief summary and analysis of the region's economic position, and it stresses major problems. There are, however, two major objections: first, the assumption that political changes in the area will *necessarily* lead to major changes in the pattern of world trade would not be justified, if economic factors governing trade remain the same, and if political factors are not deliberately introduced by the various governments to influence the pattern of trade, and, second, the optimistic forecast of probable self-sufficiency in food grains "if consumption is kept at the present level" does not consider possible population or income changes which might result in even greater food imports than at present. It is also unfortunate that this chapter is not used to analyze problems indicated in other parts of the book.

Chapter xvii contains a valuable summary of plans for industrialization within the various countries. There is some general criticism of the plans and a general statement of the problems faced in such national planning. Here again, however, one would have desired more critical analysis of both objectives and plans, especially as related to the framework set up in chapter xii.

In conclusion, the book is indispensable as a sourcebook of facts to the student of Asia and the Far East. To the general economist its value would be far greater if there were more analysis and integration of the facts.

GEORGE ROSEN

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La Banque nationale de Belgique, Vol. I: *1850–1918*. By P. KAUCH. Brussels: Société belge d'imprimerie, 1950. Pp. 432.

This is the first volume in a centennial history of Belgium's central bank. The author is a professor at the University of Brussels. The book's greatest value lies in his explanations of the central banking lessons learned down to 1918.

Several histories of the National Bank of Belgium have been written, the most recent appearing in 1939; but the authors of these earlier works did not have access to various archives, the most helpful of which were those

of the Ministry of Foreign Affairs (valuable on the Latin Union), the archives of the Mint, and to a lesser degree those of the bank. The others were disappointing. On the whole, the shortcomings of these archives made difficult the author's goal of "constantly seeking to learn to what degree the actions of men have influenced the course of events, to uncover the causes of their actions, and to discover to what extent an institution as powerful as a central bank senses its responsibility to serve the national economy" (p. 10). Professor Kauch is most successful for the periods 1850–70 and 1914–18. The bank's founder, M. Frère-Orban, president of the Council of Ministers in 1850, is the outstanding personality in the bank's history. He was a shrewd politician, and he had wide knowledge of financial matters.

Belgium had two earlier central banks. The Société générale, chartered in 1822, enjoyed the right of note issue; but it became primarily interested in long-term investments. The Bank of Belgium, founded in 1835, also enjoyed the right of issue but likewise concentrated on long-term securities. It had to suspend specie payments in 1838, and both banks did so in 1848. It was against this background that the proposal was made for a national bank of Belgium which would in time have the sole right of issue and would devote its attention to discounting and to other short-term operations. The other two banks fought the project, but M. Frère-Orban outmaneuvered them. The new bank was endowed with a capital of twenty-five million francs and given a life of twenty-five years, subject to renewal. It was forbidden to take part in investment enterprises or to loan on mortgages. Judged by the standards for central banks set up by the League of Nations in 1925, the organization of this bank was nearly ideal (pp. 73, 77, 82).

Kauch devotes the first three chapters to the background and early organizational problems of the bank and the remaining six to its history down to 1918. He covers such topics as the political maneuvering that accompanied its two charter renewals in 1872 and 1900, central banking procedure in Belgium, discounting practices and exchange fluctuations in periods of crisis, the important part played by the bank in the rise and decline of the Latin Union's system of international bimetallism, the reluctant use of checking accounts in the twentieth century, and the part played by the bank in two major wars. During an occupation a central bank is faced with the dilemma of refusing to co-operate, which handicaps an enemy but also makes life very difficult for its own citizens, or of functioning in fairly normal fashion, which makes life more bearable for its citizens but helps the enemy.

The book has copious footnotes; but they are all in the back, covering 83 pages of fine print. There are a good Bibliography and two indexes. The one of names is good, but the index of topics is not. There are only two brief tables of statistics in this entire volume. The book's gray-paper cover is unimpressive for a centennial study of a bank. One error needs correction: the Bland-Allison Act of 1878 did not put the United States off the gold standard again (p. 203). On the whole, this is a fine study. It is to be hoped that the second volume, presumably on 1918–50, will be published soon. An understanding of major central banks is of growing importance in a world that is increasingly inclined to stress credit management.

DONALD L. KEMMERER

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The British Overseas. By C. E. CARRINGTON. Cambridge: At the University Press, 1950. Pp. xxi+1092. $9.00.

In the 1920's there appeared some excellent accounts of the British Empire by J. A. Williamson, Howard Robinson, and C. F. Mullett; and in the very early 1940's Paul Knaplund and A. P. Newton attempted a larger treatment of the last one hundred years of the empire. Now C. E. Carrington, of Cambridge University, who in his provocative little study, *An Exposition of Empire*, proved his clear understanding of the forces underlying the various phases of imperial expansion and retreat, has given us a new and brilliant account of the British overseas. He feels that the long process of expansion, which since Shakespeare's time has seen the British people multiply twenty times and spread into all parts of the world, has now ended. Thus its history can properly be written. Although he indicates that the permanent British settlements in the empty lands of the temperate zone are his chief concern, he nevertheless treats the other parts of the empire as fully as does any other book. His main thesis is stated as follows: "Much hard think-

ing and bold planning went into the making of the Empire, but it was done by men at the circumference, not by men at the centre. The impetus rarely came from Whitehall. It has been my task to search elsewhere for the motive force of Empire" (p. xix).

In almost eleven hundred well-organized and well-written pages the author has distilled the latest scholarship. The specialist will not always be satisfied with Carrington's treatment of his specialty, but in the main the results are outstanding. Beginning with the early backgrounds, the author devotes about one-eighth of the book to the American colonies before 1783. Economic, social, and intellectual developments are given as much emphasis as political and religious, and this valuable approach (valuable compared to other more narrow accounts) is continued as the narrative moves into the nineteenth and twentieth centuries. The main story ends in 1939, although India and Burma, Malaya, Egypt, Palestine, Newfoundland, and the West Indies are carried through to 1948. But there is no extensive account of empire participation in World War II, as there was concerning World War I. The book concludes with some thoughtful reflections on British imperialism. The author rightly proves how, out of the five modes of expansion, the empire of settlement and the empire of ideas will long outlive the empire of trade, the empire of finance, and the empire of conquest.

A number of subjects deserve special mention for their excellent treatment. Philanthropy in the American colonies is properly emphasized; indeed, the British humanitarian movement in general is well done, especially the account of the antislavery movement. Carrington fully understands the place of the missionary and the humanitarian in the creation of a civilized policy in empire expansion. Native peoples are properly understood and described with rare insight, especially the peoples of the Southern Hemisphere. I have never read a better account of the Mogul Empire's background and how it was organized. Edward Gibbon Wakefield and his school are given their rightful place as colonial reformers, and one could not ask for a better analysis of the work of such men as Lord Durham. There is a most useful chapter entitled "Markets, Money, and Men in the Age of Free Trade." The story of New Zealand is vividly written, and such figures as Marsden, Grey, Vogel, and Seddon come to life boldly. The organization, personalities, and problems of the mid-nineteenth-century Colonial Office are described with unusual clarity. And, finally, the author writes with discernment about Joseph Chamberlain's plan for federating the empire by tariff reform and how it was defeated by England's devotion to free trade.

Occasionally there are faulty generalizations, and at times interpretation is sacrificed for detail. But there is a neat and facile use of quotations, and much new information is brought out. There are forty-two excellent maps, thirty-two well-reproduced portraits, and four useful appendixes, notably a list of prime ministers, secretaries of state for the Colonial Department, and permanent undersecretaries. Most of the errors and misprints throughout the book were discovered and printed in "Errata." The Index is somewhat British in its sparseness, and there is no bibliography or list of readings whatsoever. I hope that this omission will be remedied in the next edition.

SAMUEL CLYDE MCCULLOCH

Rutgers University

Rural Cuba. By LOWRY NELSON. Minneapolis: University of Minnesota Press, 1950. Pp. x+285. $3.50.

This is a pioneer social and economic study of rural Cuba, which reveals many of the existing conditions and problems of the rural districts. During a year's residence in Cuba, Dr. Nelson had the opportunity to visit various parts of the island and to converse with the residents of the countryside and the villages, including local leaders, farmers, teachers, and agricultural inspectors. He promoted a survey of rural conditions based on an extensive questionnaire. This was a co-operative project, supported by the Ministry of Agriculture, in which the author, a representative of the ministry, and a number of aides participated. A total of 742 families in eleven selected regions was interviewed, and the answers were tabulated. The schedule used for the survey included such subjects as family composition, housing, diet, education, recreation, family expenditures, land tenure, and farming. This information, the author's observations, a detailed analysis of the

census reports of Cuba, and an examination of the existing literature relating to the various problems involved form the basis of the chapters which survey the current rural situation.

The volume is predicated on the thesis that "the land is very rich and the people very poor," two facts which have markedly affected Cuban rural life. The first chapters make a study of the Cuban people; describe the land, the climate, and the seasons; and consider the groups of people and the settlement pattern which obtain in the rural areas. Other chapters deal with the land system—including the division, measurement, and registration—and discuss the methods of farming employed in the production of various crops. Then follows a consideration of the social organization. The class situation, the social stratification, the Cuban family, the level of living and education, are also treated. In view of the fact that much of the material for this discussion is derived from the census reports, which do not distinguish clearly between urban and rural populations, it is to be noted that several of the chapters relate to the Cuban situation in general rather than specifically to rural conditions. A final chapter contains some generalizations on rural prospects.

In connection with the survey of the Cuban family, the author remarks that it is "brief and inadequate," thus revealing a "need for further study." However, as against this rather critical characterization, he asserts elsewhere that "this book must be regarded in a very real sense as an *introduction* to the study of Cuban society." With the last statement, I agree. The volume is a valuable contribution, which reveals important factors in the rural situation in Cuba as it is today.

An appendix gives a brief description of the eleven areas covered by the special survey, and another describes the social and economic conditions of one of the areas. A copy of the schedule used for the survey would have been desirable. There is a selected Bibliography. The author and the University of Minnesota Press have rendered a real service by producing this interesting volume entitled *Rural Cuba*.

ROSCOE R. HILL

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The African Factory Worker. By THE DEPARTMENT OF ECONOMICS, UNIVERSITY OF NATAL. New York: Oxford University Press, 1950. Pp. 221. $6.00.

This detailed statistical survey of the work and life of the native employees of a tire and rubber products factory in Durban is difficult to review for readers of an American professional journal of economics. The specific details are probably of only secondary interest. As to methodology, it probably suffices to say that the investigators used techniques common to such investigations, with commendable care and adaptation to the peculiar circumstances of the survey and with particularly commendable caution.

Several observations, however, may be made relevant to a world in which "Point Four" is to play an increasing role. First, on the basis of the data in this volume, Dunlop South Africa Limited has been remarkably successful in utilizing in a modern, large-scale, mass-production enterprise large numbers of African laborers, many of whom are at best semiliterate, inexperienced in either industrialization or an exchange economy, and still powerfully influenced by the *kraal*. Second, the productive efficiency of these workers is only slightly less than that of Europeans after a somewhat longer training period. Considering the essentially migrant character of much of the work force and the nutritional, social, and cultural handicaps under which they work, the efficiency of the African workers is amazingly high. Third, one of the important barriers to successful utilization of native labor resources arises out of the policies, exemplified by housing and urbanization regulations, of a government which must pay the economic cost of the luxury of racial segregation.

By analysis of a specific case this study emphasizes the contribution to a world economy that can be made by underdeveloped areas and "backward" peoples, the rapidity with which cultural barriers to high efficiency can be broken down, and the necessity for hastening, instead of retarding, that adaptation by appropriate public policy.

The book is of specific interest to a generalized understanding of the problems and possibilities of underdeveloped areas, and it is done with thorough professional competence by authors who leave to the reader the drawing of general implications.

FREDERIC MEYERS

University of Texas

Backwoods Utopias: The Sectarian and Owenite Phases of Communitarian Socialism in America, 1663–1829. By ARTHUR BESTOR, JR. Philadelphia: University of Pennsylvania Press, 1950. Pp. x+288. $3.50.

The first fourth of this book describes the development of a "continuing communitive tradition" in this country; and the remainder is a detailed history of the Owenite enthusiasm of the 1820's and cognate ideological movements. Robert Owen, or rather the American phase of his work, is the central theme.

In the earlier, compressed chapters, Dr. Bestor develops significant theses: (1) The "communitarian point of view," which was by no means necessarily socialistic or democratic, appealed strongly to Americans, in competition with revolution, individualism, and gradual reform, as a way of social progress. (2) Whereas in Europe there was a "definite hiatus" between the earlier "religious socialism" and nineteenth-century "secular socialism," in the United States the inspiration drawn from the Reformation was "passed on as a living force to the nineteenth-century leaders" (p. 38). (3) Transplantation of religious communities to America, by intensifying feelings of "unity" and "separateness," diverted them from revolutionary and reformist programs to actual communitarian living. (4) The (economic) successes of the religious communities were the "specie basis" which "upheld the paper theories and counteracted the failures, of the French and English schools."[1]

The essential element of Owen's thought was his hope of reform through "villages of cooperation." "Equalitarianism" was at most characteristic of the "second phase—from the middle 1820's to the middle 1830's" of his intellectual development (pp. 78–79). But even in 1826 Owen's economic ideas were expressed only in general terms. "Community of Property" was proclaimed a fundamental principle of the "Community of Equality" constitution adopted in New Harmony in February, 1826; and on July 4 "Private or Individual Property" was one of Owen's "Trinity of most monstrous evils," from which he proposed to free mankind. But the February constitution "was actually vaguer than the Constitution of the Preliminary Society in everything that pertained to economic matters . . . [and] though Owen certainly expected the community to purchase or lease the [New Harmony] property . . . from him, not a word was said in the constitution about this elementary relationship" (pp. 173–74).

Failure at New Harmony is not of course attributed solely to Owen's imprudent conduct. But Bestor, for all his appreciation of Owen's "charm" and generosity, is more severe with him than have been other historians of New Harmony. William Owen is pictured struggling with hard realities on the Wabash, while his father was chasing the "phantom, which was public opinion" (p. 122). Again, in his controversy with William Maclure, Owen began, as early as November, 1826, "to play fast and loose with his agreements" (p. 197). These opinions are supported by facts, which Owen would doubtless have interpreted differently.

Bestor has written well, with humor and understanding. His story is carefully documented and supplemented with an exhaustive "bibliographical essay." Readers will eagerly anticipate a promised second volume which will follow the communitarian tradition and experiments to the "fatal day" when large-scale industry "began to render obsolete as economic units the small communities on which the communitarians had pinned their hopes" (p. 229). Incidentally, this thrice-repeated opinion seems to require qualification in view of the present-day achievements of collective communities in Israel.

C. W. EFROYMSON

Butler University

[1] P. 59; quoted from John Humphrey Noyes, *History of American Socialism* (Philadelphia, 1870), p. 670.

Freedom, Power, and Democratic Planning. By KARL MANNHEIM. New York: Oxford University Press, 1950. Pp. xxiv+384. $5.00.

This is a book "on the principles of a society that is planned yet democratic. . . . It proposes a Third Way incorporating the painful experiences of the last decades into a new pattern of democracy." The late Dr. Mannheim attempted here to come to grips with the fundamental problems of our times, and he assembles in these pages most of the important elements of the problem. Dr. Mannheim begins with an analysis of the crisis, proceeds through a lengthy analysis of "Democratic Planning and Changing Institutions," and, finally, in a concluding section, "New Men—New Values," assembles a

great deal of most interesting sociological and psychological material.

This is, in short, a kindly, learned, painstaking book full of valuable information. But I am also obliged to say that the general effect which it left with me was fuzzy. The elements of the picture are mostly there, but they never quite focus. Perhaps the general tone may be given by the following (p. 73): "The dilemma of our age may be restated as follows: Our anxieties push us to extremes: lack of control leads to chaos—stringent controls confine us to a caged-in existence. Ultimately the solution depends on our foresight and wisdom."

On the whole, it is not surprising that Dr. Lowe tells us in the Preface that the chapter on the "Control of the Economy" was in a less finished condition than were any of the other chapters at the time of Mannheim's death. Like that of Rosenfarb, Schlesinger, and many other politically oriented writers, Mannheim's economic analysis is scarcely integrated with his political analysis.

One cannot quite make out from the economic chapter, as assembled by Dr. Lowe, whether Mannheim was merely a moderate "compensatory" Keynesian, a centralized "Beveridge" planner, or a public-ownership-of-heavy-industry advocate. As I have tried to show, these are far from being the same thing. The third force, in my opinion, urgently needs to do a more careful job of synthesizing its economics and its politics.

I have discussed these problems so much in the last few years that only a few critical notes will be offered here.

(1) Mannheim's book, despite its emphasis on the importance of the business cycle, offers virtually no analysis of the causes of the cycle. The growth economics of Hicks, Harrod, Metzler, and the writer would be extremely germane here. The noncapitalist noneconomic roots of the pressure-group problem and class conflict are not adequately evaluated.

(2) Mannheim does not fully recognize the importance to democracy of the right of *counter*-organization. How can effective new leadership emerge if economic life is so centrally controlled that candidate and voter are alike open to great economic reprisal?

(3) The sections on the dangers of concentrating power (p. 72) scarcely agree with the insistence upon "strong central power" to carry out planning (p. 112).

(4) Centralized planning may indeed give many young people a "better" start in learning. But will they necessarily be allowed to learn what they want or to use their skills in *novel* (group-disturbing) ways after they have learned them? In short, will there be adequate room for social change?

The golden mean is a good thing, but how much is too much? Mannheim's analysis lacks sufficient clarity to answer this question.

DAVID MCCORD WRIGHT

University of Virginia

The New Deal Collective Bargaining Policy. By IRVING BERNSTEIN. Berkeley and Los Angeles: University of California Press, 1950. Pp. xi+178. $3.00.

This small volume (149 pages plus copy of NLRA, bibliography, and index) is another useful publication from the Southern Division of the Institute of Industrial Relations at the University of California. It deals primarily with the National Labor Relations Act of 1935, although it also devotes a chapter to the 1934 amendments to the Railway Labor Act and some attention to other earlier federal labor legislation.

The book is less an analysis of the economic validity of this legislation than it is a record of the strategy associated with its passage. "Important collections of unpublished documents" were made available to the author, and "many participants in the events" leading to the legislation were available for consultations (p. xi). It is this assembly of source information which gives the book real value.

The author is to be credited with an early expression of his own "feelings" concerning legislative encouragement of collective action. He begins with this admission: "I am persuaded that collective bargaining can be a constructive institution in a democratic society. This, at bottom, is because I feel it politically, economically, and socially desirable for all major groups to be organized in approximate equality in order to prevent anyone from gaining dominance" (p. x). In the last chapter, "A National Labor Policy," sixteen of his twenty pages are devoted to a section called "An Evaluation of the Arguments." This is a critical review of the arguments of the advocates and opponents of the National Labor Relations Act (the Wagner Act).

In the main, the opponents relied upon the

claim of unconstitutionality. The advocates, on the other hand, seem to have advanced thirteen arguments, of which eight were concerned with identification of the appropriate means to facilitate collective bargaining. Only three of their arguments—the second, fourth, and sixth (pp. 132–36)—were really directed at the question of the substantive merits of collective bargaining. The court settlement of the constitutional question demonstrates both the imprudent behavior of the opponents and the legal acceptance of the procedural arguments of the supporters. In my opinion, however, it still fails to furnish proof of the substantive merits of the legislation. Collective bargaining may be a "constructive institution in a democratic society," but the convincing evidence must be found elsewhere than in this account of the strategy of political action.

A significant feature of the volume is how well it reveals the nonscientific character of legislation in a democracy. Illustrative of this is the character of the revisions in the proposed Wagner Act made following the invalidation of the NIRA in the Schechter case. In the fall of 1934 Senator Wagner began his second effort to convert Section 7a into permanent legislation. Many months were spent in preparation of the new measure, and a fresh draft was completed before the Schechter decision was announced (May 27, 1935). But such is the democratic legislative process that even a Supreme Court decision must not be expected to produce a reconsideration of substantive facts. What actually happened, Bernstein reports, was this: "Wagner . . . felt that some changes were necessary and instructed Keyserling, Magruder, and Levy to prepare them. They submitted amendments to the *declaration of policy* to make a *showing* by explicit *language* of the *direct relationship* between industrial disputes and commerce, of emphasizing this by *reversing the order* of paragraphs, and of basing authority *exclusively* on the commerce clause by striking out *reference* to the 'general welfare.' In addition, they *altered the definitions* of 'commerce' and 'affecting commerce' to attain the same objectives. The President approved the revisions and instructed Connery to press for immediate enactment with their inclusion" (pp. 121–22). (Italics mine.) No change in analysis of facts, but changes in declaration—showing, language, order, reference, and definitions; this is the elegance of a literary sleight of hand. It would be hard to find a nicer illustration that legislation is made at least in part, by legerdemain!

The New Deal Collective Bargaining Policy furnishes another demonstration that legislation in a democracy is not a series of scientific conclusions based on verifiable experiments; it is rather the groping of people under varying pressures (as yet unmeasured) for what may be accepted as tolerable temporary rules of behavior.

C. L. CHRISTENSON

Indiana University

The Right To Organize and Its Limits. By KURT BRAUN. Washington, D.C.: Brookings Institution, 1950. Pp. xiii+331. $3.00.

The first part of this work compares the evolution of the right of labor to organize in a number of countries. The author shows the methods by which various governments have protected this right and what principles have evolved over time. He also shows the kinds of limitations that have been imposed upon that right. The author has gathered a large amount of information that is useful for comparative purposes, and the material is presented clearly and succinctly.

Some of the discussions on "union principles and policies" fail to mention that some employers who objected to the closed shop on principle were not averse to granting this concession to company unions. This issue cannot be discussed without cognizance of the once-bitter opposition to unionism shown by employers, an opposition that sometimes expressed itself in the use of labor spies and private police.

The attempt to explain the demand for union security by the instability of American unions does not appear valid. American unions show a level of stability greater than that of the French unions, and about the same as that of the British. It required a concerted drive to undermine unionism in the 1920's, and certainly union membership in industries where union security is not widespread shows no appreciably greater fluctuations than in other industries. The closed shop has never been a source of serious controversy among unions; exclusive jurisdiction has. Moreover, since the realization by the AF of L that the CIO is here to stay, most interunion differences are settled by bargaining elections. The maintenance-of-membership stipulation has only recently been used in the United States, and it was devised to overcome the objections of former anti-union employers to any type of union security. In

comparing devices used by American and European unions, it is necessary to trace, at least in summary fashion, the differing circumstances that obtain in the several countries. Otherwise differences appear fortuitous or capricious. There is no evidence, in my opinion, that the principle of majority rule in bargaining has led to industrial unrest; and evidence can be presented to show that majority rule makes for more harmonious conditions in the plant.

The problems of union security and exclusive jurisdiction, which the author discusses, raises serious problems. The author's analysis and description of how these issues are handled here and abroad will furnish arguments and evidence that will help the reader to formulate his thinking.

PHILIP TAFT

Brown University

Labour Relations in London Transport. By H. A. CLEGG. New York: Augustus Kelley, Inc., 1950. Pp. viii+188. $2.50.

The London Passenger Transport Board was formed in 1933 as a public corporation to take over the facilities of some eighty private and municipally owned companies operating busses, tramways, and "tubes" in the London area. Seventeen years later, Mr. H. A. Clegg, Fellow of Nuffield College at Oxford, asks the question, "What has this period of nationalization meant in terms of labour relations within the corporation?" His answer is bound to disappoint or anger those who believe that nationalization in and of itself is a cure-all for whatever ails working people in modern industrial society. But, if union leaders miss the ringing challenge which follows from Clegg's findings, they will do their followers a greater disservice than when they helped foster the idea that nationalization and utopia were synonymous.

The author concludes that the Board (now the London Transport Executive) has been a good employer but not significantly better than the pre–1933 Traffic Combine. His tests for good labor relations all give the same answer: productivity has not risen noticeably (if one can conclude anything from the confusing discussion on pp. 169–75), service has deteriorated somewhat, wages are down relative to national averages, the records for strikes and labor turnover are only slightly better than under the Combine, and joint consultation does not appear to have advanced much beyond the stage of discussing canteen meals and washroom cleanliness. Yet Clegg is commendably modest in the conclusions which he draws from such tests as to the meaning of nationalization in other industries and under other circumstances; his readers owe him the same courtesy in the claims which they choose to make on the basis of his extensive fact-gathering. Some of the difficulties which have beset the Board are difficulties inherent in the industry itself—the relatively small contribution which changes in worker productivity can make to over-all costs and efficiency, the limited number of "production" problems on which consultation appears feasible, and the vociferous demand of the public for low fares even if this means public subsidies to keep up transportation service. But, beyond this, it seems likely that both unions and management in London Transport have been less than bold in their willingness to experiment with industrial democracy. To understand why this has been the case would require considerably more attention to the attitudes of the bargaining parties than Clegg has given here.

No aspect of this study is likely to prove more fascinating to Americans than the discussion of a rank-and-file organization which arose in challenge to the authority of the duly elected leaders of the Transport and General Workers' Union and which "capitalized" on seeming structural weaknesses within the union to emerge as the sometime powerful Rank and File Movement. In the case of both London transport workers and dock workers, T & GWU officers have condemned these organizations as illegitimate children of Communist parentage, but they do not appear to have devoted much consideration to the problem of why it was that the movements were able to take root at all. The reader will wish that Clegg had brought even more of his keen insight to bear on this phenomenon and that he had offered some appraisal of its meaning in terms of union democracy.

JOHN R. COLEMAN

Massachusetts Institute of Technology

Economic Fluctuations in the United States, 1921–1941. By LAWRENCE R. KLEIN. New York: John Wiley & Sons, Inc., 1950. Pp. ix +174. $4.00.

Mr. Klein's book is devoted to the development and testing of econometric models for the

period 1921–41. It attempts "to estimate behavior in economic life" (p. vii); its purposes are "forecasting and making policy recommendations" (p. 1). The book is nicely organized in four chapters, which are devoted to principles of model-building, economic theory, statistical models, and data available Throughout all four chapters the thought is theoretical and explicitly experimental. Alternate theoretical assumptions regarding factors in the behavior of the economy are tested by varying "systems" of simultaneous equations that mathematically describe the econometric models. The models too are varied for greater or less refinement of estimation.

The book will definitely interest the econometrician. On the second page of the text, however, the author implies an appeal to the "majority of economists." Many of that majority will find the book laborious reading, devoted mostly to discussion of the mathematics of the problem. Nevertheless, some of the economic assumptions to be tested are challenging. Furthermore, the general construction of the models themselves well merits perusal. To those with low regard for mathematical economics this book, read with an open mind, should offer food for thought. To those who esteem mathematical economics above other forms in precision of thinking and significance of conclusions it should give pause for reflection.

The author evinces a firm faith that econometric model-building is the road to economic understanding (e.g., pp. 1–2). In the first and third chapters ("Model Building" and "General Principles and Statistical Models") his faith is well supported by statistical technique. The many assumptions in economics and pure logic on which the reasoning rests give less certain support.

The basic assumptions are of two types and will impress some readers as representing paradoxical attitudes. Two examples will suffice to illustrate those attitudes. First, throughout the book arbitrary distinctions are made between economic and noneconomic influences in the national economy. Second, in the treatment of taxes (p. 33) reliance is placed on the mechanical profit-maximizing formula which shows taxes on profits to have only indirect influence on entrepreneurial decisions as to scale of operation. The first attitude leaves the method wide open to the vagaries of human judgment; the second shuts the door so completely on judgment that most economists with taxation experience will be unable to accept it. This appearance of meticulous mathematical calculation based on easy assumptions carries throughout the book.

A prevalent weakness of economists shared in some places by the author is the confusion of economic concepts with accounting conventions. The principal example is the acceptance of economic profits and accounting profits as representing one and the same thing.

The method presented offers little to improve the underlying economic assumptions that have been a major weakness in forecasting. It does improve the mathematical manipulation, provided one agrees that the sacrifice of the causal relationship shown by the regression technique is not too high a price. Klein remarks that his method is too unwieldy for the individual investigator (p. 12), and this must enormously restrict its interest. Its application to the national economy is treated in a stimulating way, however, and the treatment is well worth consideration on the author's terms.

C. Donald Jackson

Washington, D.C.

National Income Statistics, 1938–1948. Lake Success, New York: United Nations, 1950. Pp. 249. $3.50.

This is the second compilation of national income statistics published by the Statistical Office of the United Nations. Like its predecessor, the present study owes its origin to a resolution adopted by the Economic and Social Council in March, 1947, which had as its goal the development of comparable international data in this field. Although much remains to be done before this objective is attained on any considerable scale, a comparison of the two reports and a review of the work accomplished thus far clearly indicate that substantial progress has been made.

The present report is based upon information which has been published since the first volume was completed and contains not only a considerable amount of data for recent periods (in most instances for the year 1948) but a number of revised estimates for earlier years as well. The historical series reporting aggregate income has been extended to include the period 1919–29, while for a few countries considerably earlier years are reported. Perhaps the most notable

feature of the current issue, however, is the set of social accounts presented for the thirteen countries which have adopted this technique of analysis.

The first two chapters thoroughly survey the present state of national income-reporting and discuss the principal conceptual differences found in the national income estimates of various countries. The remaining chapters present the statistical data which form the main body of the report. The statistical presentation begins with a detailed review of the national income statistics of thirty-two countries, including the social accounts of those reporting such information. In most instances the data presented were taken from official sources, but, in the absence of official information, the published work of private investigators was used. The estimates for each country are accompanied by a brief analysis and description of their principal conceptual and methodological characteristics. As in the previous issue, an attempt is made to present, for as many countries as possible (in this instance, sixteen), estimates which are based on a uniform definition of national income. In accordance with the statistical practices of many countries, national income at factor cost was adopted as the standard definition. The three summary tables, which form the final chapter of the report, present estimates of national income at factor cost by industrial origin and by distributive shares, and gross national expenditure at market prices by type of expenditure. Two appendixes present historical estimates of total income valued both at current and at constant prices.

In making this volume available to the public, the Statistical Office of the United Nations has made a most useful and valuable contribution to the statistical literature of this field. The nature of the theoretical and statistical problems encountered is described in considerable detail. Objective evaluations of the data as well as ample footnotes throughout most of the volume provide a frame of reference for interpreting the data. In view of the present state of statistical reporting in many countries and the majestic pace which often characterizes spontaneous efforts toward improvement, further progress toward an early extension of geographic coverage as well as an expansion of much of the material already reported seems to depend to a very great extent on the initiative and resourcefulness exerted by the United Nations in actively soliciting better information. As progress is made in this direction, it is to be hoped that the emphasis upon uniform reporting and international comparability of data will not obscure the need for more specialized income estimates in a form which reflects the analytical requirements peculiar to certain classes of countries, such as underdeveloped areas. A minor revision of the section "Intertemporal Comparisons of Real Income" might be undertaken to clarify the relationship between income and the terms of trade. It does not appear to be clearly brought out that, for certain national income analyses, estimates of real income should reflect changes in the terms of trade.

On the whole, the report is very well organized, concisely written, and filled with valuable information. It is a most welcome and useful addition to the resources of those interested in national income statistics.

ERNEST C. OLSON

Federal Reserve Board

Radio, Television, and Society. By C. A. SIEPMANN. London: Oxford University Press, 1950. Pp. 410. $4.75.

Information on the economics of radio and television is scanty and welcome even from one who is not primarily an economist. Besides a section summarizing R. H. Coase's study of Britain's public monopoly in broadcasting (pp. 141–54) and another treating the compatibility of profit-seeking and public service programing in American radio (pp. 60–68), Siepmann's concluding chapter on television will be the most valuable for economists.

The concluding chapter is a readable account of the technical obstacles to establishing a competitive television system in this country. Apparently the physical limitations on TV channels are far more severe than those afflicting sound radio even before frequency modulation increased the supply of outlets. The Federal Communications Commission's concern with rapid development of the yet unusable ultrahigh frequencies and its willingness to sacrifice the highest definition of service, thereby establishing at once as many outlets as possible—interference notwithstanding—are offered as indications of our government's attitude.

Siepmann also sketches in broad outline the competitive relationships of television, radio, and motion pictures. Newspapers, unfortu-

nately, are largely excluded. His skepticism as to the outright replacement of radio by television is based on what he considers the distinctive appeals of the two media. The point is well taken and is reminiscent of earlier research, which strongly indicated a low cross-elasticity of demand for newspaper and radio news, features, and advertising copy. Indeed, it is unfortunate that Siepmann made little use of the newspaper-radio struggle of the 1930's to bolster his own views of broadcasters and motion-picture producers entering television. In each instance, motives behind cross-channel affiliation and its social and economic effects appear somewhat analogous. Siepmann relies heavily on secondary sources, however, and perhaps his weakness here is that materials on the earlier episode are still badly scattered and that no definitive study has yet been published.

Surveys of the New York City and Washington radio markets, completed since the book appeared, bear out his view that radio may continue to hold its own despite the advent of television. Nonetheless, we also know that in TV families *nighttime* radio listening has dropped sharply and that, comparatively speaking, it has suffered more than newspaper reading, sports attendance, or even movie-going. It is still too early to tell how much of Siepmann's analysis is wishful thinking. One strong point in his favor is that, besides tapping radio and non-radio media, television seems to be bringing new dollars into advertising—for example, money that department stores heretofore spent on window demonstrations and salesmen. Moreover, the "competitive advertising" outlays that both Veblen and Simons grumbled about (those which neutralize themselves) may actually increase the advertising shared by printed and electronic media when television enters a community for the first time.

Siepmann believes that television may force radio to re-examine its policy toward inadequately served rural areas. Both radio and motion pictures, moreover, may have to meet TV inroads by exploring hitherto neglected minority interest. The author maintains that, to cover its high costs, television must probably capture urban mass audiences and reduce its programming to the lowest common denominator.

In short, Siepmann expects radio and motion pictures to improve their quality in the face of television's challenge; and industry spokesmen have said as much. Unfortunately, however, one movement under way which may thwart part of these desirable results is largely ignored. Motion-picture interests already operate several television stations and have additional applications pending. One wonders what effect a major merger movement between movies and television would have on the changes Siepmann predicts in geographical coverage and content. In any event, if the distinctive appeals of the two media make for successful coexistence, once the novelty effect wears off—as has been true in the newspaper-radio case—and if appropriate authorities can be convinced of this, public policy on motion-picture–television affiliations may not present as thorny a problem as its cousin did during the 1930's.

It is unfortunate that such matters were left unexplored even in a book that is not primarily an economic treatise.

HARVEY LEVIN

Penn State College

The Concept of Ethics in the History of Economics. By JOSEPH F. FLUBACHER. New York: Vantage Press, 1950. Pp. 460+ix. $5.00.

This is a different kind of history of thought. The author's principal interests are the extent to which ethical concepts are explicit or implicit in economic writings and the particular ethical doctrines which writers have accepted. In the main, the discussion adheres to the announced intention of presenting "an historical exposition" rather than "a philosophical critique." However, Professor Flubacher frequently expresses moral and intellectual judgments, both to praise and to blame. The viewpoint is Catholic. (Bishop Haas, of Grand Rapids, Michigan, contributes a Foreword.)

The book gives evidence of voluminous reading in the writings of the men discussed and in the works of such commentators as Tawney, Beer, Homan, and Roll. Most of the chapters contain little that will be new to readers reasonably familiar with the history of doctrine. But chapters ix and x pay more attention to recent American and European economists than do most texts and courses that I know, and the discussion of "Reactions and Dissents from Classicism" in chapter vi probably will in large part be new to most non-Catholic economists.

The style is generally pedestrian. Writers usually are discussed and dismissed within clearly demarcated sections of chapters and are

introduced with summarizing sentences or paragraphs better suited to lecture notes than to a book of this kind. Most judgments are phrased in such a way that they seem dutiful rather than imaginative, pat rather than profound. However, in places the author's obvious interest in his subject causes him to rise above the book's general level. The pages on Marx and Ruskin are perhaps the best.

HENRY OLIVER

Indiana University

The Impact of Government on Real Estate Finance in the United States. By MILES L. COLEAN. New York: National Bureau of Economic Research, 1950. Pp. xviii+171. $2.50.

This admirable monograph serves several functions. Its primary purpose is to describe the influence of government upon real estate finance. Its collateral, but no less important, functions are to provide a useful economic history of American public policy concerning land, housing, and real estate finance and to present an illuminating study in the best tradition of institutional economics.

The volume is one of a series of eight studies on urban real estate finance projected by the National Bureau of Economic Research as part of its Financial Research Program. This program is under the directorship of Professor R. J. Saulnier, who is the author of the first volume in the series. Other volumes will deal with the activities of the principal types of lending agencies in the real estate field and with the special problems of real estate finance.

Colean recognizes that his subject is not confined to the direct and immediate impact of government upon real estate finance. It also includes the underlying influences determining the general environment in which real estate finance is conducted: for example, the basic law of real property, regulation of the construction industry, labor legislation, zoning and planning laws, conservation measures, fiscal and monetary policy, anti-trust laws, taxation, etc. He has chosen, however, to consider these broader questions only incidentally (particularly in chaps. ii and ix). His attention is centered upon governmental regulation and supervision of lending institutions; the procedures government prescribes for transfer, foreclosure, and protection of parties in real estate transactions; and direct lending and subsidizing by government.

He traces the land policy of the federal and state governments from early times to the present, considers the development of the *mortgage* as an instrument of real estate finance, describes the evolution of lending institutions in real estate finance and their supervision by government, and traces the more direct intervention of government in this field in more recent years. The final summary chapter is entitled "The Environment of Real Estate Finance."

The author's principal thesis is that the considerable influence of government in the field of real estate finance has developed chiefly during the last twenty years under the impact of depression and war but that the character of governmental intervention during this period is the outgrowth of a long history. It has been strongly affected by early attitudes toward government, expansion in the frontier, homeownership, small holdings, and private enterprise. He points out (p. 150) that the main aim of governmental land policy during the nineteenth century was "to encourage enterprise rather than to provide it with physical or economic protection." During the evolution of governmental policy since the establishment of the Federal Land Bank System, the government has become "a guardian of individual welfare." However, these two philosophies have overlapped in such a way that there are unresolved issues in our division of public responsibilities, in our methods, and in our objectives.

Colean ends on a pessimistic note (p. 160): "So far, there has been little reason to believe that a means for bringing consistency into the vast range of governmental impacts on real estate finance is likely to be brought about in the near future."

HOWARD R. BOWEN

University of Illinois

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